

# PUBLIC HEALTH REPORTS

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NO. 45

## PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Poliomyelitis is still more prevalent in the United States than it usually is at this time of year, but the number of cases has been decreasing since the second week of September.

Reports of the number of cases of poliomyelitis from 42 States for the week ended October 29, 1927, showed a decrease of 16 per cent from the figures for the preceding week and of 21 per cent from those for the week ended October 15, 1927.

Comparing the reports for the weeks ended October 22 and 29, 1927, Indiana, Missouri, Nebraska, Kansas, and Ohio showed an aggregate increase of 31 cases for the latter week. Eight other States showed increases of a few cases only. The figures for Massachusetts declined from 99 for the week ended October 22 to 66 for the week ended October 29. Pennsylvania reported a decrease from 45 cases to 18.

Reports for the week ended October 29, 1927, and the corresponding week of the years 1925 and 1926, are available from 37 States. These States reported 368 cases for the week in 1927, 61 cases for the corresponding week in 1926, and 101 cases for the week in 1925.

Figures by States are given in the table on pages 2794-95. Reports for the week ended November 5, 1927, will be found on page 2804.

## MICROSCOPIC CHANGES OF TULARAEMIA IN THE TICK *Dermacentor andersoni* AND THE BEDBUG *Cimex lectularius*

By EDWARD FRANCIS, Surgeon, Hygienic Laboratory, United States Public Health Service

### PART I: TICKS

Ticks play a most important rôle in the transmission of tularaemia from rabbit to man and from rabbit to rabbit, and in the permanent maintenance of the infection in nature. Numerous observations have been made by physicians of the transmission of tularaemia to man in northwestern United States by *Dermacentor andersoni*, and

in southern and southwestern United States by a tick (species undetermined). Parker and Spencer,<sup>1 2</sup> have reported:

(1) That adult wood ticks of the species *Dermacentor andersoni* collected May 19, 1923, from vegetation in Montana and injected into guinea pigs caused acute death of the pigs with typical lesions of tularaemia from which *Bacterium tularensis* was isolated on culture medium. (2) That nymphal ticks reared in the laboratory and infected as larvae by feeding on a tularaemia guinea pig caused acute death with typical lesions of tularaemia in a guinea pig on which they fed 247 days after the ingestion of infected blood by the antecedent larvae. (3) That adult ticks reared in the laboratory and infected as larvae caused typical tularaemia in a guinea pig on which they fed 199 days after ingestion of infected blood by the antecedent larvae. (4) That tularaemia was hereditarily transmitted by *Dermacentor andersoni* females to their eggs, larvae, and nymphs, but not to the adults; nymphal infection was demonstrated 208 days after parent female engorgement.

The foregoing observations and experiments have led to a study of the microscopic changes in infected ticks. Ticks were studied only within 30 days after their first infective feed, in smears, cultures, and serial sections of adults infected as adults by feeding on infected guinea pigs. The result has been a demonstration that *Dermacentor andersoni* is a true biological host of tularaemia—that it harbors the infection not only in its feces, but also in the epithelial cells of its digestive tract and Malpighian tubes, and in its coelomic fluid.

*Method of transmission.*—The absence of demonstrable organisms in the salivary glands and their constant presence in the feces leads to the belief that transmission is due to the mechanical entrance of feces through the biting wound.

*Source of uninfected ticks.*—Two lots of uninfected adult ticks were furnished by R. R. Parker, special expert, United States Public Health Service, Hamilton, Mont., and were received in July, 1924, at the Hygienic Laboratory, Washington, D. C., where infection with tularaemia was begun on August 1, 1924.

Lot 1988 K: This lot of 55 uninfected adults had been reared by Doctor Parker in his laboratory and were descended from an engorged female collected in Montana, May 15, 1923, from a cow "down with ticks." In August, 1923, the larvae, after feeding on a normal Belgian hare, molted to nymphs and later the nymphs were proved to be free from tularaemia by injection into guinea pigs. In May, 1924, the flat nymphs were used to infest a normal Belgian hare, and in July, 1924, they began molting to adults.

<sup>1</sup> Parker, R. R., Spencer, R. R., and Francis, Edward: Tularaemia infection in ticks of the species *Dermacentor andersoni* Stiles in the Bitterroot Valley, Montana. Pub. Health Rep. 39: 1057-1073 (May 9, 1924).

<sup>2</sup> Parker, R. R., and Spencer, R. R.: Hereditary transmission of tularaemia infection by the wood tick *Dermacentor andersoni* Stiles. Pub. Health Rep., 41: 1403-1407 (July 9, 1926).



Fig. 1.—Section of rectal sac of tick *Demacator andersoni* showing epithelium distended with *Bacterium tularensis*

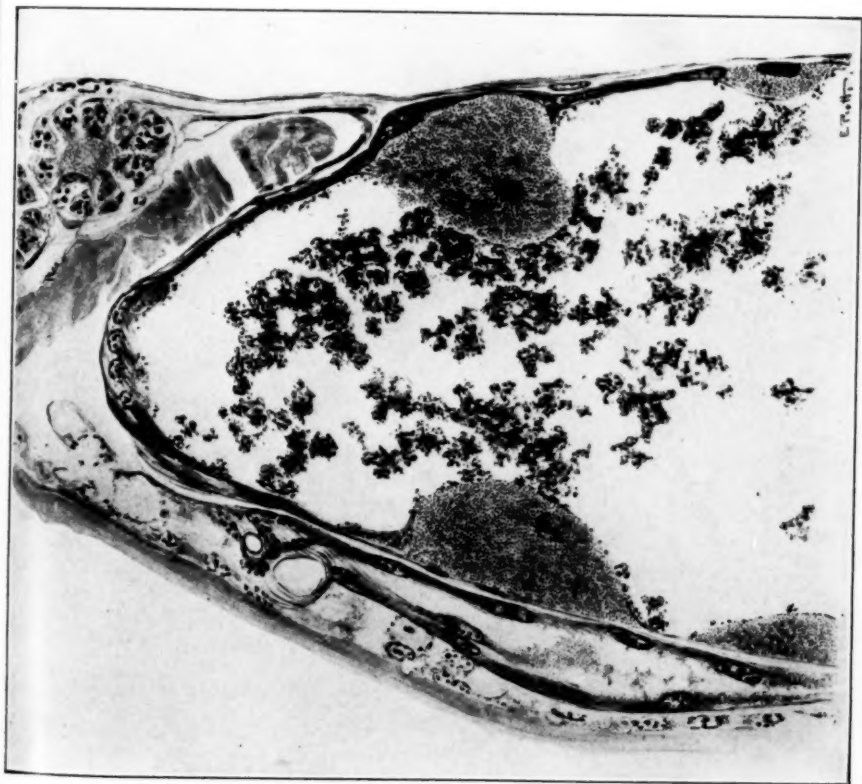


Fig. 2.—Section of gut of bug *Cimex lectularius* showing epithelium distended with *Bacterium tularensis*

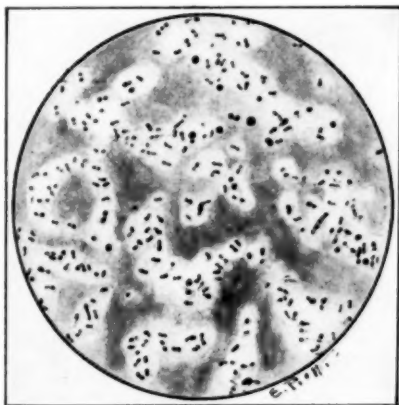


Fig. 3.—Smear of body fluid of leg of tick *Dermacentor andersoni* showing *Bacterium tularensis*



Fig. 4.—Section of rectal sac of tick *Dermacentor andersoni* showing epithelium distended with *Bacterium tularensis*. (A.M.M. 42260)





Fig. 5.—Low power section of gut of bug *Cimex lectularius* showing epithelium distended with *Bacterium tularensis*. (A.M.M. 42259)

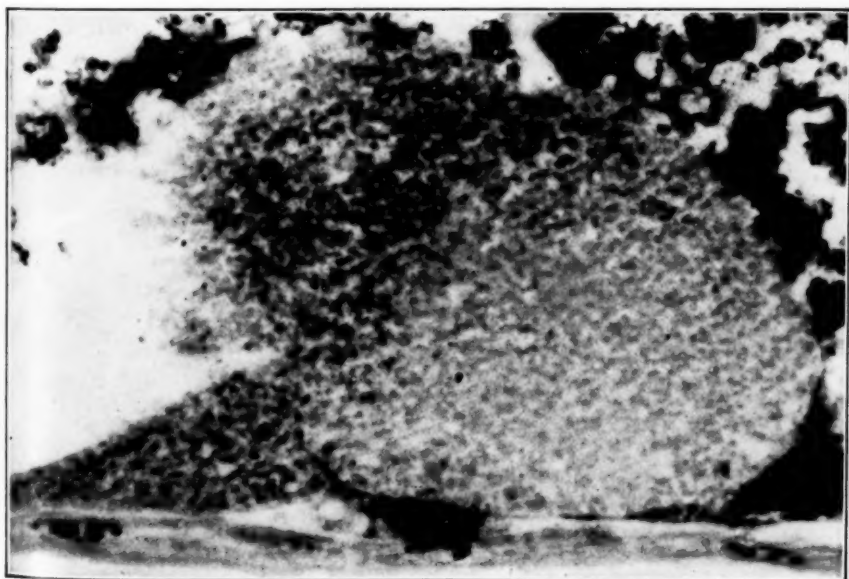


Fig. 6.—High power magnification of cell at bottom of Fig. 5. (A.M.M. 42254)

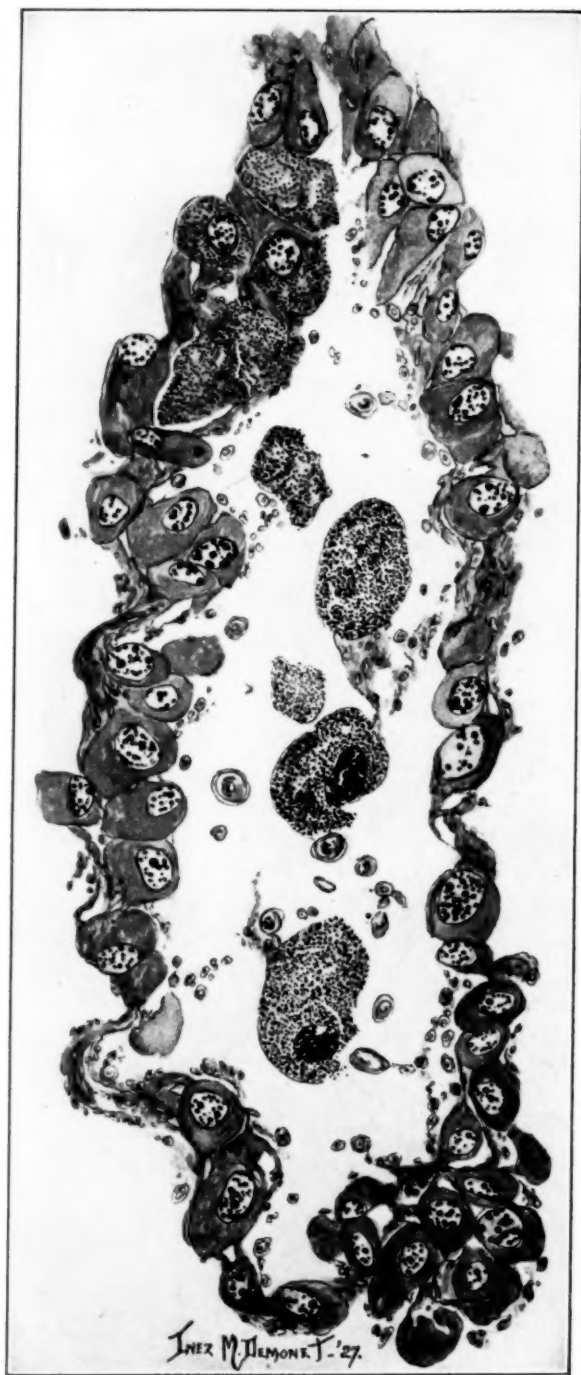


Fig. 7.—Section of Malpighian tube of tick *Dermacentor andersoni* showing *Bacterium tularensis* in epithelium

**LOT OF WILD TICKS:** This lot of 100 wild adults was collected from nature in Montana by Doctor Parker, and it is within the bounds of possibility that some of them may have already been infected with tularaemia before being experimentally infected at the Hygienic Laboratory.

**Method of infecting ticks.**—Infection of ticks was accomplished in August, 1924, by feeding the two lots of adults on guinea pigs which had been infected either by subcutaneous inoculation of a virulent culture of *Bacterium tularensis* or by being rubbed on the abraded skin of the abdomen with the spleen of a guinea pig dead from tularaemia. The life of an infected guinea pig is three to five days, and bacteraemia is greatest in its dying hours.

Ticks were transferred in a tangled mass from a glass vial to a piece of coarse-meshed linen gauze, 4 inches square, and immediately covered with a brass gauze capsule  $1\frac{1}{2}$  inches in diameter. The linen gauze was then drawn tightly around the wire capsule and tied with a string. The ticks, thus confined, were applied to a clipped area on the front of the thorax of an infected guinea pig, where they fed through the linen gauze. The capsule was held firmly against the skin of the pig by a band of adhesive tape 3 inches wide which encircled capsule and pig.

Ticks were applied to a guinea pig 24 hours after inoculation and were allowed to remain until the death of the pig. The capsule containing the ticks was then removed and applied to a second pig which had been inoculated 24 hours previously and were again allowed to remain until the death of the pig. Ticks were in this way applied to a series of five or six infected pigs within a period of about three weeks in order to insure maximum infection.

**Infection of coelomic fluid.**—As ticks reached engorgement, their body fluid was examined in smears for the presence of *Bacterium tularensis* preliminary to dissection. No tick was dissected until its body fluid showed organisms in a stained smear. On clipping the terminal joint of a leg with scissors, the body fluid welled up and was collected with a capillary pipette and transferred to a slide and stained. If no organisms were found, the tick was again applied to an infected pig. If organisms were found, the fluid was cultured and the tick was dissected, fixed, embedded, sectioned serially, and stained in Giemsa solution. One can usually predict by the color of the body fluid whether organisms will be found in smears, because normal body fluid is straw colored and clear, but infected coelomic fluid is distinctly turbid and milky in color and shows myriads of coccoidal and bacillary organisms. (See fig. 3.)

**Cultures of coelomic fluid.**—Pure cultures of *Bacterium tularensis* were readily obtained by transfer of a drop of a milky body fluid to coagulated egg yolk medium by means of a capillary pipette. Growth

became abundant after incubation at  $37^{\circ}$  for 24 hours. As a precaution against contamination while taking cultures of the body fluid, the terminal joint of the leg was first bathed with iodine, then clipped with sterile scissors, and the escaping fluid was touched with the tip of a sterile capillary pipette, into which it entered freely, and was transferred to a culture tube.

*Animal inoculations.*—Guinea pigs inoculated subcutaneously with body fluid in which organisms were found always died acutely manifesting the typical lesions of tularaemia. Guinea pigs inoculated with the loose, dried particles of tick feces which accumulated quite

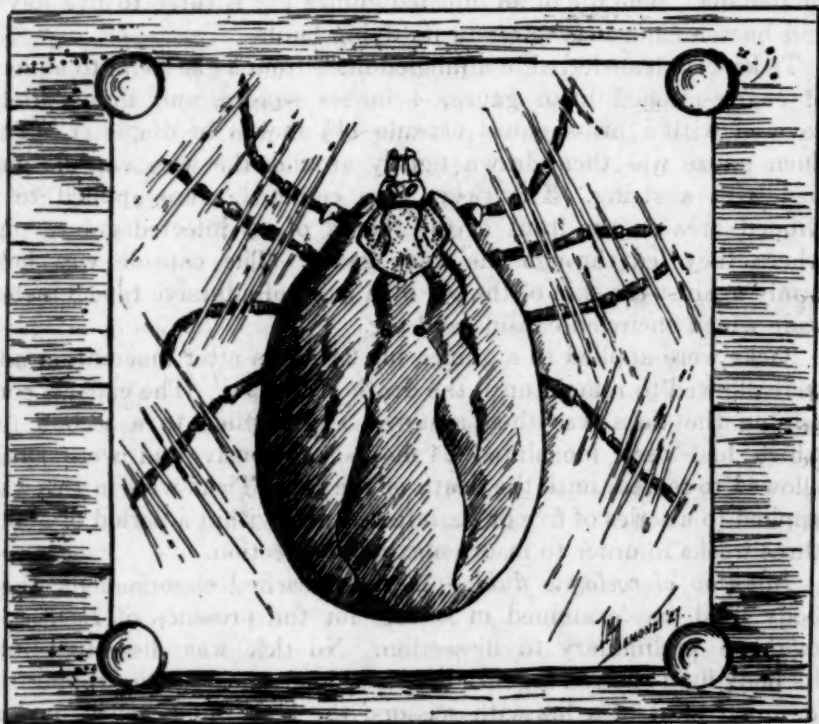


FIG. 8.—Method of immobilizing a tick during dissection. Adhesive plaster fastened to a block of wood with thumb tacks. Legs of tick pressed into adhesive by strokes of a warm needle

abundantly in the wire capsule while ticks were feeding, died acutely and showed the typical lesions of tularaemia.

*Pathological technique.*—Only living ticks were dissected for serial sections and not those which seemed to die from the infection. During dissection, ticks were immobilized under a dissecting microscope on a strip of zinc oxide adhesive plaster, the outstretched legs being pressed into the adhesive by strokes of a warm dissecting needle (fig. 8). The dorsal chitin was grasped with a pair of strong forceps ground to a fine point, and was cut away with a cataract knife, the entire tick being bathed in a large drop of saline solution.

The organs were then freed in a mass by dissection from the ventral chitin and fixed in Zenker's solution. The further steps of imbedding in paraffin, sectioning, and staining were carried out as recommended by Wolbach.<sup>3</sup>

Parker has used the following modification of the above method of immobilizing a tick: After pressing the extended legs of the tick against the adhesive, he covers the legs with two short strips of adhesive  $\frac{1}{8}$ -inch wide, one strip on either side, drawn taut in a circular direction, close against the tick's body. This serves to hold the tick quite rigid and prevents any possibility of detachment from the adhesive.

*Microscopic changes.*—The striking feature of the serial sections was the distention of the epithelial cells of the rectal sac, intestines, and Malpighian tubes with organisms forming blue-stained areas which instantly caught the eye under the 16 mm. objective.

**CELLULAR INVASION:** The epithelial cells of the rectal sac (figs. 1 and 4) of the lower intestine at its junction with the rectal sac, of the diverticulae of the intestine and of the Malpighian tubes (fig. 7), in the order of frequency named, were swollen and packed with organisms which were confined to the protoplasm of the cells and did not invade the cell nucleus. Between the invaded cells were normal epithelial cells. Occasionally there was a fusiform swelling of the gut wall, projecting toward the lumen and containing organisms; this indicated multiplication of the organisms in the wall itself. Occasionally a circular colony of organisms having the size and shape of a swollen epithelial cell was seen free in the lumen, as if the distended cell had ruptured and discharged its contents in a mass; this would account for the infectiousness of the feces. There was an absence of widespread distribution of free organisms in the lumen, thus indicating an absence of general multiplication of organisms in the contents of the intestine, rectal sac, and Malpighian tubes.

**ABSENCE OF ORGANISMS:** Organisms could not with certainty be identified in sections of the salivary glands, ovaries, eggs, male genitalia, heart, brain or muscles. Although the coelomic fluid was rich in organisms, the walls of the body cavity were so torn apart by dissection and washing as to preclude demonstration of organisms within the normal channels of the circulation.

## PART II: BEDBUG

There is no report of the transmission of tularaemia to man by bedbugs, nor is there any suspicion that bedbugs transmit the infection in nature among animals. Under experimental conditions in the laboratory, bedbugs have transmitted the infection from mouse to mouse.

<sup>3</sup> Wolbach, S. B.: Studies on Rocky Mountain spotted fever. *J. Med. Res.*, 41: 1-197 (1919).



*Duration of infection in bugs.*—In the experiments here reported, infection was demonstrated in bugs up to the forty-seventh day, when the experiments terminated. In experiments already reported,<sup>4</sup> tularaemia caused acute death of a mouse which ate a bug which had been infected 226 days previously and caused acute death of a guinea pig which was injected with fresh feces of bugs which had been infected 250 days previously. The indications from the experimental inoculations and from the histopathology are that bugs remain infected throughout their lives. Hereditary transmission of infection through the egg was not tested.

*Transmission by bugs.*—In previous experiments it was noted<sup>4</sup> that forced interruption of a bug's meal of blood on an infected mouse conduced to the immediate completion of that meal on a healthy mouse. The shorter the period of interruption, the greater the likelihood of transmission. When the interruption was for only a few seconds, transmission was successful in all attempts (five) and was due to the mechanical transfer of infection by a grossly contaminated proboscis.

Transmission by bugs which first fed to engorgement on infected mice and a few days later fed to engorgement on the tails of healthy mice was successful in only 3 of our 23 attempts; the intervals which elapsed between the biting of the infected mice and the biting of the three healthy mice were 7, 15, and 71 days, respectively; the number of bugs employed in the three transmissions were groups of 28, 24, and 14, respectively; the exact parts played by bites and by feces in the three transmissions are impossible of determination, because the mouse tails became freely covered by bug feces during each biting experiment, which lasted one hour.

*Method of transmission.*—In spite of the long duration of infection in the bug and the wide distribution of infection in its body, transmission by feeding (other than interrupted feeding) was quite infrequent and was probably due to the mechanical entrance of infected feces through the biting wound.

*Present studies.*—Infection in bedbugs was studied in smears, cultures, and serial sections of 30 bugs experimentally infected by feeding on infected white mice and sectioned at various intervals up to 47 days after the first infective feed.

*Source of bugs.*—Two lots of uninfected bugs were collected from the wooden cages in which a stock supply of fresh guinea pigs was being bred. One lot was in the larval stage or had apparently molted once. The other lot consisted of adults. Both lots were unengorged.

*Method of infecting bugs.*—The two lots were first fed on August 24, 1924, on the tail of an infected, stuporous white mouse which had

<sup>4</sup> Francis, Edward, and Lake, G. C.: Transmission of tularaemia by the bedbug, *Cimex lectularius*. Pub. Health Rep., 37: 83-95 (Jan. 20, 1922).

received subcutaneously a virulent culture of *Bacterium tularensis* three days before. Within the 47 days the surviving bugs were given 6 feeds, 2 on infected mice and 4 on normal mice, as follows:

August 24: Fed adults and larvae on infected mouse.

September 1: Fed adults and larvae on normal mouse.

September 10: Fed adults and larvae on infected mouse.

September 18: Fed adults and larvae on normal mouse.

September 24: Fed adults and larvae on normal mouse.

October 2: Fed adults and larvae on normal mouse.

*Evidence of infection in bugs.*—Infection of bugs was tested by the injection of bug feces and coelomic fluid into guinea pigs, by smears and cultures of coelomic fluid, by serial sections of bugs, and by noting the effect on normal mice on which the infected bugs fed. This last test—transmission by feeding—was entirely negative, the four normal mice, noted above, all remaining entirely well. Bug feces were always infective, tests being made every three days by injection of guinea pigs with the washings of soiled strips of filter paper on which the bugs rested and which were replaced every three days with fresh strips.

*Coelomic fluid.*—The normal coelomic fluid obtained from a leg was clear and straw-colored, but an infected fluid was cloudy or milky in color, showed *Bacterium tularensis* in smears, yielded a pure culture of the organism on culture medium and killed a guinea pig acutely, producing the typical lesions of tularaemia. Infection of the coelomic fluid appeared much earlier in bugs infected as adults than in bugs infected as larvae.

**INFECTED AS ADULTS:** In one instance organisms were noted in smears and cultures of the coelomic fluid of an adult on the fifth day after the first infective feed. The next shortest time was 14 days. Positive smears and cultures of coelomic fluid were obtained thereafter from 13 adults dissected for sections at intervals up to the forty-seventh day, when the last bug was dissected.

**INFECTED AS LARVAE:** Of 15 bugs infected as larvae and killed for sectioning after various molts at intervals between the thirtieth and forty-seventh day after the first infective feed, none showed organisms in the coelomic fluid of the leg until the forty-seventh day, when the last one was killed; this one showed a moderate number of organisms in a smear of the coelomic fluid obtained by dividing a tibia.

*Rickettsia lectularius.*—Thread forms of the rickettsia-like parasite described by Arkwright, Atkin, and Bacot<sup>1</sup> were seen in the majority of bugs in smears of the coelomic fluid taken from the legs and in a few instances in sections of cells of the Malpighian tubes. There was no multiplication of these forms on coagulated egg yolk culture medium.

<sup>1</sup> Arkwright, J. A., Atkin, E. E., and Bacot, A.: An hereditary rickettsia-like parasite of the bedbug (*Cimex lectularius*). *Parasitology*, 13: 27-36 (1921).

*Microscopic changes.*—Serial sections of infected bugs showed multiplication of organisms in the fresh blood contents of the anterior portion of the mid-gut, heavy infection of the epithelial cells of the posterior portion of the mid-gut, and occasional infection of the Malpighian tubes.

**ANTERIOR PORTION OF MID-GUT:** Groups or colonies of blue-stained organisms were readily visible, with the 16 mm. objective, distributed throughout the unaltered blood contents of the expanded cardia or anterior portion of the mid-gut, but no invasion of the epithelial cells of the wall were noted in that portion, although organisms were seen in contact with the wall.

**POSTERIOR PORTION OF MID-GUT:** The most striking feature in bugs was the invasion of the epithelial cells of the posterior portion of the mid-gut with organisms which caused the swollen infected cells to stand out prominently in blue outlines under the 16 mm. objective (fig. 5). With the 2 mm. objective, the cell protoplasm was seen packed with blue-stained organisms which did not invade the cell nucleus (figs 2 and 6). Between infected cells were normal cells. In cross section of a restricted portion of the gut the projection of the swollen cells toward the lumen almost caused its obliteration. In cross section of an expanded portion of the gut, infected cells, with or without a nucleus, were seen free in the lumen as if they had been given off from the wall or as if a cell had ruptured and discharged its contents in a mass having the outline of a cell. The gut wall was invaded with organisms causing fusiform blue-stained swellings to project toward the lumen. Widespread distribution of organisms in the gut contents, such as one would expect if the contents were acting as a culture medium, was not seen. The cells at the constricted junction of gut and rectum were usually heavily infected, but definite infection of the cells of the rectum was not seen.

**MALPIGHIAN TUBES:** Cells distended with organisms were frequently seen. As in the gut, they were readily visible with the 16 mm. objective.

**ABSENCE OF INFECTION:** *Bacterium tularensis* was not seen in the oesophagus, salivary apparatus, reproductive organs, brain, or muscles.

*Technique.*—Immobilization of mice while bugs fed upon them was necessary to prevent the mice from eating the bugs. This was accomplished by the use of the apparatus shown in Figure 9.

The infected bugs were kept, some at 26° C. and some at 37° C., on small strips of filter paper contained in glass tubes which stood in water in a glass jar. Only living bugs were dissected. Those which seemed to die from the infection were discarded.

Immobilization of a bug while taking coelomic fluid from its leg was done by pressing its dorsal surface against a fixed piece of adhesive plaster; the proximal joints of a leg were likewise immobilized by pressure against the adhesive plaster, leaving the tibia and tarsus free. If cultures were to be made from the coelomic fluid of a leg, preliminary sterilization of the leg was done by directing the tibia and tarsal segments into a capillary pipette containing iodine. After a few seconds the pipette was removed and, with sterile scissors, the leg was divided through the tibia. With sterile capillary pipette a welling drop of coelomic fluid was collected from the cut stump and

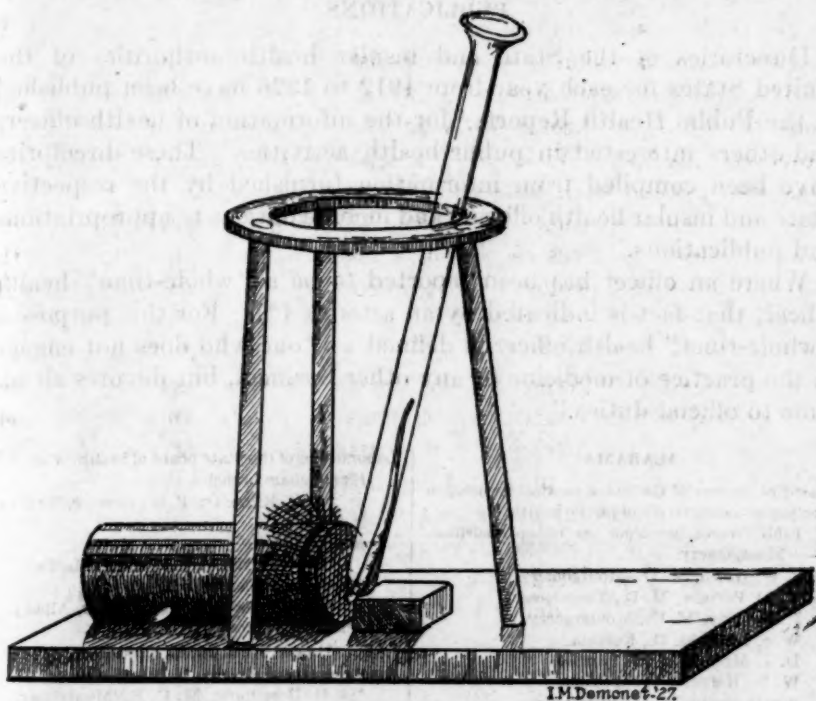


FIG. 9.—Method of immobilizing a mouse while feeding bugs upon his tail. Mouse confined in iron pipe; tail protruding through linen gauze and through hole in upright glass tube. Bugs finally poured in from top of tube.

transferred to coagulated egg yolk medium, and a smear of the fluid was stained and examined. Adults were immobilized for dissection by pressing their ventral surface and legs against adhesive plaster. After removal of the dorsal chitin the internal organs were freed in a mass, fixed in Zenker, and sectioned serially.

Younger forms were sectioned without dissection and without removal of chitin other than the legs, care being taken to fix them in Zenker immediately after a molt, when the chitin was soft; and to insure a flat position during fixation, the first half hour of fixation was with the bug pressed flat against adhesive plaster and covered



with a large drop of Zenker. Serial sections of undissected young specimens showed the internal organs in their natural relations and were much preferable to sections of dissected adults.

*Illustrations.*—Figures 4, 5, and 6 are by Maj. G. R. Callender, M. C., curator, Army Medical Museum. Figures 1, 2, and 3 are by Miss Etta Piotti, and Figures 7, 8, and 9 are by Miss Inez Demonet.

## STATE AND INSULAR HEALTH AUTHORITIES, 1927

### DIRECTORY, WITH DATA AS TO APPROPRIATIONS AND PUBLICATIONS

Directories of the State and insular health authorities of the United States for each year from 1912 to 1926 have been published in the Public Health Reports<sup>1</sup> for the information of health officers and others interested in public-health activities. These directories have been compiled from information furnished by the respective State and insular health officers, and include data as to appropriations and publications.

Where an officer has been reported to be a "whole-time" health officer, that fact is indicated by an asterisk (\*). For this purpose a "whole-time" health officer is defined as "one who does not engage in the practice of medicine or any other business, but devotes all his time to official duties."

#### ALABAMA

Board of censors of the State medical association acting as a committee of public health:

Bibb Graves, governor, *ex officio* chairman, Montgomery.

S. W. Welch, M. D., Montgomery.

W. D. Partlow, M. D., Tuscaloosa.

J. N. Baker, M. D., Montgomery.

W. S. Britt, M. D., Eufaula.

D. T. McCall, M. D., Mobile.

W. W. Harper, M. D., Selma.

Wyatt Heflin, M. D., Birmingham.

M. Y. Dabney, M. D., Birmingham.

B. L. Wyman, M. D., Birmingham.

R. S. Hill, M. D., Montgomery.

Executive health officer:

\*S. W. Welch, M. D., State health officer, Montgomery.

Registrar of vital statistics:

\*W. T. Fales, Montgomery.

\*Ethel Hawley, chief clerk, Montgomery.

Laboratories of the State board of health:

General director—

\*L. C. Havens, M. D., Montgomery.

Anniston branch—

\*Katie Mae Wilson, Anniston.

Laboratories of the State board of health—Con.

Birmingham branch—

\*E. K. Kline, Dr. P. H., director, Birmingham.

Mobile branch—

\*G. E. Davis, M. S., director, Mobile.

Tennessee Valley branch—

\*A. J. Perolio, M. D., director, Albany.

Tuscaloosa branch—

\*Lucile Watt, M. S., Tuscaloosa.

State sanitary engineer:

\*G. H. Hazelhurst, M. C. E., Montgomery.

Assistant sanitary engineers:

\*H. G. Menke, B. C. E., Montgomery.

\*C. C. Kiker, B. C. E., Montgomery.

\*T. H. Milford, Montgomery.

Epidemiologists:

\*D. G. Gill, M. D., director, Montgomery.

\*A. H. Graham, M. D., Malarialogist, Montgomery.

County organization:

\*D. L. Cannon, M. D., C. P. H., first director, Montgomery.

\*C. L. Murphree, M. D., second director, Decatur.

\*B. F. Austin, M. D., third director, Montgomery.

<sup>1</sup> Reprints Nos. 83, 123, 190, 268, 344, 405, 488, 544, 605, 706, 775, 871, 949, 1,043, and 1,106, from the Public Health Reports.



## Public health nursing:

\*Jessie L. Marriner, R. N., director, Montgomery.

\*Francis Montgomery, R. N., assistant director, Montgomery.

## Venereal disease control:

\*W. C. Blasingame, director, Montgomery.

## Inspection:

\*C. A. Abele, director, Montgomery.

\*H. J. Thrasher, deputy inspector, Montgomery.

\*H. W. Caldwell, deputy inspector, Montgomery.

\*C. H. South, deputy inspector, oyster control, Mobile.

\*L. C. Frank (Associate sanitary engineer, U. S. P. H. S.) in charge of milk inspection, Montgomery.

\*J. W. Garrett, milk inspector, Montgomery.

\*F. A. Clarke, D. V. M., milk inspector, Montgomery.

\*U. D. Franklin, milk inspector, Montgomery.

\*F. H. Downs, milk inspector, Montgomery.

## Tuberculosis control:

\*J. M. Graham, director, Montgomery.

## Chief clerk:

\*Bessie A. Tucker, Montgomery.

## Financial secretary:

\*Adna Eley Alldredge, Montgomery.

## Appropriations for fiscal year ending September 30, 1927:

Central administration .....	\$150,000.00
County health work .....	57,083.33

## ALASKA

## Board of health:

George A. Parks, governor, Juneau.

Harry C. De Vigne, M. D., commissioner of health, Juneau.

## Executive health officer:

Harry C. De Vigne, M. D., commissioner of health, Juneau.

## Assistant commissioners of health:

Curtis Welch, M. D., Nome.

J. A. Sutherland, M. D., Fairbanks.

A. H. Blakemore, Cordova.

## Appropriation for 1927-1928, \$18,100.

## ARIZONA

## State board of health:

George W. P. Hunt, governor, president, Phoenix.

John W. Murphy, attorney general, vice president, Phoenix.

F. T. Fahlen, M. D., secretary, Phoenix.

## Executive health officer:

F. T. Fahlen, M. D., State superintendent of public health, Phoenix.

## Executive secretary:

\*Mrs. F. C. Hurst, Jr., Phoenix

## State registrar of vital statistics:

F. T. Fahlen, M. D., Phoenix.

## Child hygiene division:

\*Mrs. Charles R. Howe, director, Phoenix.

\*Jennette W. Hemphill, R. N., field nurse.

\*J. Frances Ross, R. N., field nurse.

\*Mary S. Kelleher, R. N., field nurse.

## State bureau of vital statistics:

\*Mrs. Ruby L. Jacquemin, statistician, Phoenix.

## Director State laboratory:

\*Miss Jane H. Rider, Tucson.

## Appropriations for fiscal year ending June 30, 1928:

## State board of health—

Salaries .....	\$12,800.00
Operating expense .....	5,450.00
Traveling expense .....	2,500.00
Capital investment .....	500.00
Repairs and replacements .....	150.00

## State laboratory, Tucson—

Salaries .....	6,540.00
Operating expense .....	700.00
Traveling expense .....	900.00
Capital investment .....	500.00

## Child hygiene division, Sheppard-

## Towner work—

Salaries .....	13,475.00
Operating expense .....	1,622.42
Traveling expense .....	5,010.00
Unexpended balance of 1927 funds .....	77.01

Total .....

49,624.43

The Arizona State laboratory is connected with the University of Arizona, and is located at Tucson, Ariz.

## ARKANSAS

## Board of health:

John R. Dibrell, M. D., president, Little Rock.

O. L. Williamson, M. D., Marianna.

E. L. Watson, M. D., Newport.

A. S. Gregg, M. D., Fayetteville.

L. D. Duncan, M. D., Waldron.

W. P. Parks, M. D., Hot Springs.

F. O. Mahony, M. D., El Dorado.

## Executive health officer:

\*C. W. Garrison, M. D., State health officer, Little Rock.

## Bureau of vital statistics:

\*Mrs. Mary Ellis Brown, statistician, Little Rock.

## Hygienic laboratory:

\*H. V. Stewart, associate director, Little Rock.

## Bureau of sanitation and malaria control:

\*M. Z. Bair, chief sanitary engineer, Little Rock.

## Bureau of venereal disease control:

\*C. W. Garrison, M. D., director, Little Rock.

## Bureau of child hygiene:

\*C. W. Garrison, M. D., director, Little Rock.

## Appropriations for biennial period ending June 30, 1929:

Executive department, salaries and miscellaneous .....	\$26,080
Bureau of vital statistics .....	33,800
Payment of local registrars .....	34,000
Bureau of venereal disease control .....	2,000
Malaria control .....	8,400
Bureau of sanitation .....	10,029
Bureau of child hygiene .....	3,000
Hygienic laboratory .....	18,340
Total .....	135,640

## CALIFORNIA

## Board of public health:

George E. Ebricht, M. D., president, San Francisco.

Fred F. Gundrum, M. D., vice president, Sacramento.

Walter M. Dickie, M. D., director of public health, Sacramento.

A. J. Scott, Jr., M. D., Los Angeles.

Edward F. Glaser, M. D., San Francisco.

Adelaide Brown, M. D., San Francisco.

Robert A. Peers, M. D., Colfax.

## Department of public health:

\*Walter M. Dickie, M. D., director of public health, Sacramento.

\*Daniel H. Blood, assistant to director, Sacramento.

## Epidemiologist:

\*Charles H. Halliday, M. D., Berkeley.

\*Paul M. Ellwood, M. D., assistant epidemiologist, Berkeley.

## District health officer:

\*Gavin Telfer, M. D., southern division.

## Chief sanitary inspector:

\*Edward T. Ross, Sacramento.

## Chief cannery inspector:

\*Milton P. Duffy, San Francisco.

## Vital statistics:

\*L. E. Ross, registrar, Sacramento.

## Bureau of registration nurses:

\*Anna C. Jamme, R. N., chief, San Francisco.

## Bureau of tuberculosis:

\*Edythe L. M. Tate-Thompson, chief, Sacramento.

## Bureau of food and drugs:

\*M. E. Jaffa, chief, Berkeley.

## Bacteriological laboratory:

\*W. H. Kellogg, M. D., chief, Berkeley.

## Bureau of sanitary engineering:

\*C. G. Gillespie, C. E., chief, Berkeley.

## Bureau of child hygiene:

\*Ellen S. Stadtmuller, M. D., chief, San Francisco.

## Malaria control:

Edward Stuart, C. E., in charge.

Appropriations for biennial period ending June 30, 1929. (For 79th and 80th fiscal years.)

## Administration:

For support.....\$498,253

Aid to mosquito abatement districts.....20,000

## Division of cannery inspection:

For support.....126,020

(Payable from cannery inspection funds.)

## Nurses registration bureau:

For support.....35,390

## Tuberculosis bureau:

For support.....43,640

For subsidies.....600,000

Total.....1,323,303

## Other sources of revenue:

Fees for registration of nurses, \$10 each.

Renewal of registration certificates, \$1 per year.

Licensing of cold-storage warehouses, rated according to capacity.

Fines for violation of pure food and drugs act.

Fees for licenses, \$10 each, and contributions, for credit to division of cannery inspection.

Fees for certified copies of records.

## Publications issued by health department:

Biennial report.

Weekly bulletin.

Laboratories at Berkeley are connected with University of California.

## COLORADO

## Board of health:

Sherman Williams, M. D., president, Denver.

S. R. McKelvey, M. D., secretary, Denver.

J. S. Hasty, M. D., Lamar.

Ben Beshoar, M. D., Trinidad.

M. Ethel V. Fraser, M. D., Denver.

Ralph M. Jones, D. O., Denver.

C. A. Davlin, M. D., Alamosa.

Charles W. Thompson, M. D., Pueblo.

## Executive health officer:

\*S. R. McKelvey, M. D., secretary, State board of health, Denver.

## Bacteriologist:

William C. Mitchell, M. D., Denver.

## Medical inspector:

J. W. Morgan, M. D., Denver.

## State food and drug commissioner:

\*S. H. Loeb, Denver.

## Division of social hygiene:

\*S. R. McKelvey, M. D., director, Denver.

## Division of sanitary engineering:

\*Dana E. Kepner, director, Denver.

## Division of plumbing inspection:

\*Irving H. Fuller, inspector, Denver.

## Appropriations for years 1927-1928:

Salaries.....	\$38,400
Laboratory equipment and supplies.....	4,000
Printing and publications.....	7,100
Traveling expenses.....	8,000
Samples and supplies (food).....	600
Sanitary engineering.....	13,900
Veneral disease.....	40,000
Incidental expenses.....	2,040
Total.....	114,040

The laboratory of State board of health is not connected with any institution.

## CONNECTICUT

## Public health council:

Edward K. Root, M. D.

S. B. Overlock, M. D.

C.-E. A. Winslow, M. S., D. P. H.

James W. Knox.

Edward P. Jones.

James A. Newlands, B. S.

## Executive health officer:

\*Stanley H. Osborn, M. D., C. P. H., commissioner of health, Hartford.

**Bureau of preventable diseases:**

\*Millard Knowlton, M. D., C. P. H., director.

**Bureau of vital statistics:**

\*William C. Welling, director.

**Bureau of public health nursing:**

\*Sarah R. Addison, R. N., director.

**Bureau of child hygiene:**

\*A. Elizabeth Ingraham, M. D.

**Bureau of public health instruction:**

\*Elizabeth C. Nickerson, B. S., C. P. H.

**Bureau of laboratories:**

\*F. Lee Mickle, M. S., director.

**Bureau of sanitary engineering:**

\*Warren J. Scott, S. B., director.

**Division of occupational diseases:**

\*Albert S. Gray, M. D.

**Division of venereal diseases:****Division of mental hygiene:**

H. A. Bancroft, M. D., chief.

**Division of mouth hygiene:**

Clyde R. Salmons, D. D. S., chief.

Appropriation for fiscal period ending June 30, 1929 (two years), \$519,500.

**Publications issued by health department:**

Weekly bulletin.

Monthly bulletin.

Annual vital statistics report.

Annual report of State department of health.

Miscellaneous pamphlets.

Laboratory is not connected with an educational institution.

**DELAWARE****State board of health:**

William P. Orr, M. D., president, Lewes.

Mrs. Charles Warner, vice president, Wilmington.

Robert E. Ellegood, M. D., State Road.

Margaret L. Handy, M. D., Wilmington.

Mrs. Julia Ashbrook, Wilmington.

W. P. Pierce, M. D., Milford.

**Executive health officer:**

\*Arthur T. Davis, M. D., Dover.

**Director of laboratory:**

\*Rowland D. Herdman, B. S., Dover.

**Communicable diseases:**

\*L. D. Phillips, M. D., Dover.

**Director of child hygiene:**

\*Clealand A. Sargent, M. D., Dover.

**Sanitary engineer:**

\*Richard C. Beckett, B. S., Dover.

**Superintendent of Brandywine sanatorium:**

\*Seth Hurdle, M. D., Marshallton.

**Superintendent of Edgewood sanatorium:**

\*Elizabeth Van Vranken, R. N., Marshallton

Appropriations for each fiscal year ending June 30, 1928 and 1929:

General administration.....\$60,500

Hygienic laboratory.....9,000

Edgewood sanatorium for colored tuberculous patients.....12,000

Brandywine sanatorium for white tuberculous patients.....40,000

Total.....121,500

**Publications:**

Biennial report..

Bi-monthly health news.

Bulletin on health subjects.

The laboratory of the State board of health is not connected with the State university.

**DISTRICT OF COLUMBIA****Executive health officer:**

\*William C. Fowler, M. D., health officer, Washington.

**Assistant health officer:**

\*Edward J. Schwartz, M. D., Washington.

**Chief clerk and deputy health officer:**

\*Arthur G. Cole, Washington.

**Chief bureau of preventable diseases and director bacteriological laboratory:**

\*James G. Cumming, M. D., Washington.

**Bacteriologist:**

\*John E. Noble, Washington.

**Serologist:**

\*Jesse P. Porch, D. V. M., Washington.

**Chemist:**

\*Aubrey V. Fuller, Washington.

**Chief sanitary inspector:**

\*C. R. Holman, Washington.

**Director child hygiene service:**

\*Hugh J. Davis, M. D., Washington.

**Chief food inspector:**

\*Reid R. Ashworth, D. V. S., Washington.

**Chief medical and sanitary inspector of schools:**

\*Joseph A. Murphy, M. D., Washington.

**Appropriations for the fiscal year ending June 30, 1928:**

Salaries.....\$150,740

Prevention of communicable diseases.....40,000

Disinfecting service.....6,000

Isolation wards at hospitals.....23,000

Milk and food inspection and regulation.....6,100

Dispensary service, including treatment of tuberculosis and venereal diseases.....20,000

Maintaining a child hygienic service.....45,000

Hygiene and sanitation, public schools.....66,800

Laboratory service.....3,000

Miscellaneous.....7,960

Total.....374,590

**Publications issued by health department:**

Weekly report by health department.

Annual report of health officer.

Monthly statement of average grade of milk sold.

**FLORIDA****Board of health:**

Chas. H. Mann, president, Jacksonville.

H. Mason Smith, M. D., Tampa.

W. D. Nobles, M. D., Pensacola.

**Executive health officer:**

\*B. L. Arms, M. D., State health officer, Jacksonville.

**Diagnostic laboratories:**

\*Pearl Griffith, B. E., acting director, Jacksonville.

## Bureau of vital statistics:

\*Stewart G. Thompson, D. P. H., director,  
Jacksonville.

## Bureau of communicable diseases:

\*F. A. Brink, M. D., director, Jacksonville.

## Bureau of sanitary engineering:

\*E. L. Filby, C. E., director, Jacksonville.

## Bureau of child hygiene and public health nursing:

\*Mrs. Laurie Jean Reid, R. N., director,  
Jacksonville.

## Appropriation for health department:

Three-eighths mill tax levied upon the assess-  
able property of the State.

## Publications issued by health department:

Pamphlets covering all phases of public health.

Public health information disseminated through  
the weekly and daily papers of the State.

Florida health notes.

Annual reports.

Laboratory not connected with State university or  
other similar educational institution.

## GEORGIA

## Board of health:

Robert F. Maddox, president, Atlanta.

James H. McDuffie, M. D., vice president,  
Columbus.

T. F. Abercrombie, M. D., secretary, Atlanta.

Charles H. Richardson, M. D., Macon.

A. D. Little, M. D., Thomasville.

John W. Daniel, M. D., Savannah.

W. I. Halley, M. D., Hartwell.

Fred D. Patterson, M. D., Cuthbert.

John A. Rhodes, M. D., Crawfordville.

A. C. Shamblin, M. D., Rome.

C. R. Brice, D. D. S., Gainesville.

A. A. Lawry, D. D. S., Valdosta.

M. S. Brown, M. D., Fort Valley.

M. L. Duggan, State superintendent of schools,  
ex officio, Atlanta.

J. M. Sutton, State veterinarian, ex officio,  
Atlanta.

## Executive health officer:

\*T. F. Abercrombie, M. D., commissioner,  
Atlanta.

\*Joe P. Bowdoin, M. D., deputy commissioner,  
Atlanta.

## Division of venereal-disease control:

\*Joe P. Bowdoin, M. D., director, Atlanta.

## Division of county health work:

\*M. E. Winchester, M. D., director, Atlanta.

## Division of laboratories:

\*T. F. Sellers, director, Atlanta.

## Division of sanitary engineering:

\*L. M. Clarkson, director, Atlanta.

## State tuberculosis sanatorium:

\*Edson W. Glidden 2d, M. D., superintendent,  
Alto.

## Bureau of vital statistics:

\*Butler Toombs, acting director, Atlanta.

## Division of child hygiene:

\*Joe P. Bowdoin, M. D., director, Atlanta.

## Georgia training school for mental defectives:

\*John W. Oden, M. D., superintendent.

## Division of accounting and purchasing:

\*C. L. Tinsley, director, Atlanta.

Appropriations for the fiscal year ending Dec. 31,  
1927:

General appropriation.....	\$81,431
Venereal-disease control.....	10,000
Maternity and infant hygiene.....	5,000
State tuberculosis sanatorium.....	100,000
Georgia training school for mental de- fectives.....	25,000
Total appropriation by legislature..	231,431
Maternity and infancy.....	13,610
Maternity and infancy (Federal Govern- ment funds, fiscal year ending June 30, 1927).....	23,610
Central administration, county health work (International Health Board funds).....	4,000
Central administration, malaria control (International Health Board funds).....	3,200
Grand total.....	275,851

## HAWAII

## Board of health:

F. E. Trotter, M. D., president and executive  
officer, Honolulu.

W. B. Lymer, attorney general, Honolulu.

C. B. Cooper, M. D., Honolulu.

D. S. Bowman, Honolulu.

J. D. McVeigh, Honolulu.

J. Ordenstein, Honolulu.

George Denison, Honolulu.

## Executive health officer:

\*F. E. Trotter, M. D., president of the board of  
health, Honolulu.

## Secretary:

\*M. R. Weir, Honolulu.

## Bacteriologist:

A. N. Sinclair, M. D., Honolulu.

## Tuberculosis bureau:

\*Howard W. Chamberlin, M. D., Honolulu.

## Health officer:

James T. Wayson, M. D., Honolulu.

## Sanitary engineer:

\*S. W. Tay, Honolulu.

## Food commissioner and analyst:

\*M. B. Bairos, Honolulu.

## Oahu Insane Asylum:

\*A. B. Eckerdt, M. D., superintendent, Hono-  
lulu.

## Leprosy settlement:

\*R. L. Cooke, superintendent, Kalaupapa,  
Molokai.

\*A. B. Potter, M. D., physician, Kalaupapa,  
Molokai.

\*Robert L. McArthur, M. D., assistant physi-  
cian, Kalaupapa.

## Chief sanitary inspector, Oahu:

\*A. K. Arnold, Honolulu.

## Chief sanitary inspector, Hawaii:

\*C. Charlock, Hilo.

## Chief sanitary inspector, Maui:

\*R. C. Lane, Wailuku.

## Chief sanitary inspector, Kauai:

\*A. P. Christian, Kapaa.

## Appropriations, 1927-1929:

## Board of health—

Salary, president.....	\$14,400.00
Salary, public health officer.....	8,400.00
Salary, secretary.....	7,200.00
Salaries, office employees.....	32,860.00
Expenses, office.....	16,005.00
Expenses, board of medical examiners—	
Personal service.....	250.00
Expenses.....	700.00

## Bureau of vital statistics—

Salary, registrar general.....	6,000.00
Salaries, deputies and clerks.....	22,200.00
Salaries, registrar, Honolulu.....	3,600.00
Expenses, office registrar general.....	12,000.00
Purchase of equipment.....	400.00

## Bureau of sanitary engineering—

Salary, sanitary engineer.....	9,600.00
Other personal service.....	8,640.00
Expenses.....	1,740.00

## Sanitation—

Salary, chief sanitary inspector, Oahu.....	7,200.00
Other personal services.....	157,800.00
Sanitary expenses, Territory.....	20,125.00
Salaries and expenses, plague campaign.....	51,540.00
Salaries and expenses, mosquito campaign.....	6,500.00

## Pure food and drug bureau—

Salaries.....	21,600.00
Expenses.....	3,525.00

## Bacteriological bureau—

Salary, bacteriologist and pathologist.....	6,000.00
Other personal services.....	500.00
Expenses.....	3,950.00

## Government physicians—

Salaries.....	76,560.00
Hawaii.....	\$32,160.00
Maui.....	18,600.00
Kauai.....	12,000.00
Oahu.....	12,000.00
Lanai.....	1,800.00

(Provided, however, that no salary shall be allowed or paid unless physicians employed or appointed in the several districts shall treat the indigent sick free of charge in such district or districts, as the case may be.)

## Quarantine and medical service—

Salaries.....	23,600.00
Expenses.....	33,050.00

## Quarantine stations—

Repairs, maintenance, equipment, and salaries, Honolulu.....	20,805.00
Repairs, maintenance, equipment, and salaries, Hilo.....	

## Appropriations, 1927-1929—Continued.

## Care of lepers and their children—

## KALAUPAPA AND KALIHU HOSPITAL

## Personal services—

Superintendent.....	\$9,600.00
Other personal services.....	235,890.00
Other current expenses.....	431,244.00
Motor vehicles.....	3,150.00
Other equipment.....	13,296.00
Buildings and equipment.....	4,000.00
Allowance needy blind patients, extra \$5 per month.....	7,200.00

## KALIHU HOSPITAL AND LEPER SETTLEMENT

Aiding indigent persons released from Kalihu Hospital and Leper Settlement.....

2,500.00

## KAPIOLANI GIRLS' HOME

Salaries.....	15,330.00
Maintenance.....	36,450.00

## KALIHU BOYS' HOME

Salaries.....	24,940.00
Maintenance.....	34,150.00

## Prevention and cure of tuberculosis—

Salaries.....	116,195.00
Expenses, including purchase of automobiles.....	38,355.00
Cure and treatment of tubercular patients in sanitariums.....	421,690.00

Oahu, Leahi Home.....\$168,000.00

Maui, Kula Sanitarium.....

96,000.00

Kauai, Samuel Mahelona Memorial Hospital.....

72,000.00

Hawaii, Puumale Home.....

40,250.00

Improvements, Puumale Home.....

45,430.00

## Insane asylum—

Salary, superintendent.....	8,400.00
Pay roll.....	229,810.00
Maintenance.....	169,790.75
Compensation to patients for labor.....	600.00
Other equipment.....	48,813.25

## Sanitarium—

Salaries, employees.....	21,120.00
Maintenance.....	16,504.00

## Venereal-disease clinic—

Salaries.....	11,400.00
Expenses.....	5,285.00

## Bureau welfare and hygiene of maternity and infancy—

Salaries.....	8,400.00
Expenses.....	4,951.92
Equipment.....	100.00

Total.....

2,495,964.92

## Publications issued by health department:

Annual report of president.  
Registrar general's report.



Laboratory work done in the private office of Dr. A. N. Sinclair; in Hilo, Hawaii, Laboratory in Board of Health Building.

### IDAHO

Department of public welfare:

- \*David Burrell, commissioner.
- \_\_\_\_\_, public health adviser.
- \*Lawrence J. Peterson, bacteriologist.
- \*William Vernon Leonard, chemist.
- \*Robert H. Pratt, dairy, food, drug, hotel, and sanitary inspector.
- \*C. K. Macey, dairy, food, drug, hotel, and sanitary inspector.

Executive health officer:

- \*David Burrell, commissioner of public welfare, Boise.

Appropriation for biennial period ending

Dec. 31, 1928:

Personal service .....	\$51,120
Other expenses .....	15,025
Venereal-disease control .....	2,200
Total .....	68,345

State laboratory is not connected with an educational institution.

### ILLINOIS

Board of public-health advisors:

- T. D. Doan, M. D., president.
- Herman N. Bundesen, M. D., secretary.
- W. A. Evans, M. D.
- E. P. Sloan, M. D.
- Mrs. E. N. Monroe.

Director of public health:

- \*Isaac D. Rawlings, M. D., Springfield.

Assistant director of public health:

- \*Thomas H. Leonard, M. D.

Division of sanitation and engineering:

- \*Harry F. Ferguson, C. E., chief sanitary engineer.

Division of communicable diseases:

- \*J. J. McShane, M. D., D. P. H., chief.

Division of child hygiene and public-health nursing:

- \*Grace S. Wightman, M. D., superintendent.

Division of tuberculosis:

- \*Thomas H. Leonard, M. D., acting chief.

Division of laboratories:

- \*Thomas G. Hull, Ph. D., chief.

Division of vital statistics:

- \*Sheldon L. Howard, registrar.

Division of public-health instruction:

- \*Baxter K. Richardson, chief.

Division of social hygiene:

- \*C. C. Copelan, M. D., chief.

Division of hotel and lodging-house inspection:

- \*Arch Lewis, superintendent.

Appropriations for biennial period ending

June 30, 1929:

Salaries .....	\$774,460
Salaries State officers .....	30,400
Office expenses .....	20,300
Traveling expenses .....	134,192
Operating, supplies, and expenses .....	188,932
Equipment and repairs .....	27,100
Contingent .....	38,700
Printing .....	51,200
Postage .....	20,000
Rabies .....	4,000
Total .....	1,289,284

Publications issued by health department:

Illinois Health News (monthly).

Weekly press bulletin.

Educational health circulars.

Laboratory is not connected with an educational institution.

### INDIANA

Board of health:

- James A. Turner, M. D., president, Ladoga.
- A. J. Hostettler, M. D., vice president, Lagrange.
- John H. Green, M. D., North Vernon.
- Cavins R. Marshall, M. D., Indianapolis.
- William F. King, M. D., secretary, Indianapolis.

Executive health officer:

- \*William F. King, M. D., State health commissioner, Indianapolis.

Division of vital statistics:

- \*H. M. Wright, director, Indianapolis.

Laboratory of hygiene:

- \*C. F. Adams, M. D., B. S. A., director, Indianapolis.

Division of food and drugs:

- \*I. L. Miller, State food and drug commissioner, Indianapolis.

Milk laboratory:

- \*Frank C. Wilson, B. S., M. S., director, Indianapolis.

Water and sewage laboratory:

- \*Lewis S. Finch, B. S., sanitary engineer, Indianapolis.

Division of child hygiene:

- \*Ada E. Schweitzer, M. D., director, Indianapolis.

Division of communicable diseases:

- \*H. W. McKane, M. D., director, Indianapolis.

Epidemiologist:

- \*Walter W. Lee, M. B., Indianapolis.

Division of school hygiene:

- \*H. R. Condrey, director, Indianapolis.

Division of housing:

- \*A. E. Wert, director, Indianapolis.

Department of public-health nursing:

- \*Eva F. McDougall, R. N., director, Indianapolis.
- \*Ella McNeill, R. N., B. S., assistant director, Indianapolis.

Appropriations for biennial period ending September 30, 1929, \$180,500 per annum.

Laboratories are not connected with an educational institution.

### IOWA

State department of health:

#### EX OFFICIO

- John Hammill, governor, Des Moines.
- W. C. Ramsay, secretary of State, Des Moines.
- B. E. Johnson, treasurer of State, Des Moines.
- J. W. Long, auditor of State, Des Moines.
- M. G. Thornburg, secretary of agriculture, Des Moines.
- Henry Albert, M. D., Des Moines.

#### APPOINTEE BY GOVERNOR

- W. D. Hayes, C. P. H., president, Sioux City.
- H. E. Suggs, M. D., Clinton.
- H. L. Sayler, M. D., Des Moines.
- D. C. Steelsmith, M. D., C. P. H., Dubuque.
- A. A. Robertson, M. D., Council Bluffs.

**Executive health officer:**

\*Henry Albert, M. D., State health commissioner, Des Moines.

\*James Wallace, M. D., C. P. H., deputy commissioner, Des Moines.

**Director of public health nursing:**

\*Edith Countryman, R. N., Des Moines.

**Director, division of examinations:**

\*H. W. Grefe, Des Moines.

**Chief engineer:**

\*A. H. Wieters, C. E., Des Moines.

**Director nursing education:****Lecturer to girls:**

\*D. Pirie Beyea, Des Moines.

**Assistant State registrar:**

\*R. L. McLaren.

Housing work is carried on by engineering division.

Medical, nurses, dental optometry, cosmetology, chiropractic, osteopathy, embalming, podiatry, and barber examining boards are combined in State department of health.

**Appropriations for fiscal year ending June 30, 1928:**

For salaries and wages.....	\$29,700
Miscellaneous traveling.....	3,000
Antitoxin, vaccine and other prophylactics.....	5,000
Sanitary engineering and housing—	
Salaries and wages.....	9,900
Traveling.....	5,000
Equipment and laboratory.....	1,000
Quarantine enforcement and other contingencies.....	4,000
<b>Total.....</b>	<b>57,000</b>

**Publications:**

Biennial report, quarterly bulletin, health news letter.

**Laboratories (at Iowa City):**

Staff for bacteriological and serological laboratories and appropriation for the same not included in above.

**KANSAS****Board of health:**

Clarence A. McGuire, M. D., president, Topeka.

Walter A. Carr, M. D., Junction City.

George I. Thacher, M. D., Waterville.

John H. Henson, M. D., Mound Valley.

Addison Kendall, M. D., Great Bend.

Clay E. Coburn, M. D., Kansas City.

Arthur J. Anderson, M. D., Lawrence.

V. C. Eddy, M. D., Colby.

Walter J. Eilerts, M. D., Wichita.

Thomas Armory Lee, attorney, Topeka.

**Executive health officer:**

\*Earle G. Brown, M. D., secretary State board of health, Topeka.

**Division of vital statistics:**

\*W. J. Davies, State registrar.

**Division of communicable diseases:**

\*C. H. Kinnaman, M. D., epidemiologist, Topeka.

**Division of foods and drugs:**

\*Thomas I. Dalton, assistant chief food and drug inspector, Topeka.

**Division of child hygiene:**

\*J. C. Montgomery, M. D., chief, Topeka.

**Division of rural sanitation:**

\*J. C. Montgomery, M. D., director, Topeka

**Division of water and sewage:**

Ernest Boyce, B. S., chief, Lawrence.

**Division of public health education:**

\*Earle G. Brown, M. D., director, Topeka.

**Division of venereal diseases:**

\*Earle G. Brown, M. D., director, Topeka.

Water and sewage laboratories at Kansas University:

Ernest Boyce, B. S., director, Lawrence.

**Food laboratory at Kansas University:**

Prof. E. H. S. Bailey, director of food analysis, Lawrence.

**Drug laboratory at Kansas University:**

Prof. L. D. Havenhill, director of drug analysis, Lawrence.

**Food laboratory at Kansas Agricultural College:**

Prof. H. H. King, director of food analysis, Manhattan.

**Public health laboratory, Topeka:**

\*Earle G. Brown, M. D., acting director, Topeka.

**Appropriations for fiscal year ending June 30, 1928:**

Salaries.....	\$21,300
Miscellaneous.....	3,500
Water and sewage division.....	3,000
Free distribution of antitoxins, etc.....	3,500
Public health laboratory, and the department of division of venereal disease control; distribution of arsphenamine (606) to indigent poor of the State; assistance and maintenance of clinics.....	10,000
Division of child hygiene.....	5,000
Division of food and drugs.....	5,000
County aid, full time demonstrations.....	5,000
<b>Total.....</b>	<b>56,350</b>

**Other sources of revenue:**

Marriage fees, approximately \$20,000.

Water and ice analysis fees, approximately \$14,000.

Food and drug laboratories at Kansas University maintained by university maintenance fund, and food laboratory at Kansas Agricultural College maintained by agricultural college maintenance fund.

**Publications issued by health department:**

Quarterly bulletin.

Biennial report.

Weekly morbidity report.

**KENTUCKY****Board of health:**

Joseph E. Wells, M. D., president, Cynthiana.

A. T. McCormack, M. D., secretary, Louisville.

J. Watts Stovall, Grayson.

Vernon Blythe, M. D., Paducah.

H. T. Alexander, M. D., Fulton.

H. H. Carter, D. O. Shelbyville.

George S. Coon, M. D., Louisville.

J. W. Kincaid, M. D., Catlettsburg.

Addison Dimmitt, Louisville.

**Executive health officer:**

\***A. T. McCormack, M. D., D. P. H.**, State health officer, Louisville.

**Bureau of vital statistics:**

\***J. F. Blackerby, director**, Louisville.

**Bureau of bacteriology:**

\***Lillian H. South, M. D.**, director, Louisville.

**Bureau of sanitary engineering:**

\***F. C. Dugan, C. E.**, director, Louisville.

**Bureau of food, drugs, and hotels:**

\***Sarah Vance Dugan, director**, Louisville.

**Bureau of venereal diseases:**

**Jethra Hancock, M. D.**, Louisville.

**Bureau of public health nursing:**

\***Margaret East, R. N.**, director, Louisville.

**Bureau of maternity and child health:**

\***Annie S. Veech, M. D.**, director, Louisville.

\***Juanita Jennings, M. D.**, assistant, Louisville.

**Bureau of prevention of trachoma and blindness:**

\***C. B. Kobert, M. D.**, director, Louisville.

**Bureau of public health education:**

\***Adelbert Thomas, director**.

**Bureau of county health work:**

\***P. E. Blackerby, M. D.**, director and assistant State health officer, Louisville.

\***M. W. Steele, M. D.**, assistant, Louisville.

\***V. A. Stilley, M. D.**, assistant, Louisville.

**Bureau of mental hygiene:**

**Frank O'Brien, Ph. D.**, director, Louisville.

**Bureau of tuberculosis and State tuberculosis sanitarium:**

\***Paul A. Turner, M. D.**, director and superintendent, Louisville.

**Bureau of dental health:**

**R. P. Keene, D. D. S.**, director.

**Legislative appropriation for fiscal year ending June 30, 1928, \$238,698.84.****Publications issued by health department:**

Monthly bulletin.

**Laboratories:**

State board of health, Louisville.

Public service laboratories of the University of Kentucky, at Lexington, are required by law to handle health work, but are not included in above appropriation.

**LOUISIANA****Board of health:**

**Oscar Dowling, M. D.**, president, Shreveport.  
**T. T. Tarlton, M. D.**, vice president, Grand Coteau.

**Fred Ratzburg, D. D. S.**, Shreveport.

**E. S. Matthews, M. D.**, Bunkie.

**Mrs. L. C. McVoy**, Baton Rouge.

**M. P. Boebinger, M. D.**, New Orleans.

**A. O. Hoefeld, M. D.**, New Orleans.

**T. J. Labbe**, St. Martinville.

**G. M. Snellings, M. D.**, Monroe.

**Miss Fannie B. Nelken**, secretary.

**Executive health officer:**

\***Oscar Dowling, M. D.**, president, State board of health, New Orleans.

**Bacteriologist:**

**W. H. Seemann, M. D.**, New Orleans.

**Registrar:**

**J. E. Doussan, M. D.**, New Orleans.

**Sanitary engineer:**

\***John H. O'Neill**, New Orleans.

\***A. H. Fletcher**, assistant sanitary engineer.

**Child hygiene:**

\***Agnes Morris**, director, New Orleans.

**Maud Loeber, M. D.**, medical consultant, New Orleans.

**Food and drug commissioner:**

\***L. C. Williams**, assistant, New Orleans.

**Analyst:**

\***Cassius L. Clay**, New Orleans.

**Epidemiologist:**

\***Paul R. Neal, M. D.**, New Orleans.

**Director of dairy division:**

\***Russell S. Smith**.

**Bureau of research and information:**

\***Leonard C. Scott**, acting assistant surgeon, U. S. P. H. S., New Orleans.

**Bureau of public health administration:**

\***C. V. Akin**, surgeon, U. S. P. H. S., New Orleans.

**Appropriations for fiscal year ending June 30, 1928, \$75,000.**

Liquidation board, sanitary rehabilitation flooded areas, \$62,000.

**Other sources of revenue:**

Fees from inspection of oil, and tax on kerosene.

**Publications issued by health department:**

Monthly bulletin.

Quarterly bulletin.

Annual almanac.

Biennial report.

Miscellaneous leaflets.

**MAINE****Public health council:**

**C. F. Kendall, M. D.**, chairman, Augusta.

**Hiram Ricker**, South Poland.

**H. A. Kelley, D. D. S.**, Portland.

**Miss Annie Peabody**, Portland.

**J. G. Towne, M. D.**, Waterville.

**O. R. Emerson, M. D.**, Newport.

**Executive health officer:**

\***C. F. Kendall, M. D.**, State commissioner of health, Augusta.

**Division of administration:**

\***C. F. Kendall, M. D.**, Augusta.

**Division of communicable diseases:**

\***G. H. Coombs, M. D.**, director, Augusta.

**Division of laboratories:**

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**Division of sanitary engineering:**

\***Elmer W. Campbell, D. P. H.**, Augusta.

**Division of vital statistics:**

\***C. F. Kendall, M. D.**, State registrar, Augusta.

**Division of social hygiene:**

\***George H. Coombs, M. D.**, director, Augusta.

**Division of public health nursing and child hygiene:**

\***Edith L. Soule, R. N.**, Augusta.

**Division of dental hygiene:**

\***Dorothy Bryant, D. H.**, Augusta.

**District health officers:**

\***J. L. Pepper, M. D.**, South Portland.

\***E. P. Goodrich, M. D.**, Lewiston.

\***H. D. Worth, M. D.**, Bangor.

\***G. H. Hutchins, M. D.**, Waterville.

\***L. W. Hadley, M. D.**, Machias.

\***G. E. Parsons, M. D.**, Rockland.

\***B. F. Porter, M. D.**, Caribou.

# Appropriations for fiscal year ending June 30, 1928:

Salaries and clerk hire.....	\$38,000
Office expense and epidemic fund.....	20,000
District and local health officers.....	38,000
Venereal-disease control work.....	14,000
Maternity and child-welfare work.....	10,000
Branch State laboratory, Caribou.....	2,500
Aid for typhoid carriers.....	3,000

Total..... 125,500

## Other sources of revenue:

Census Bureau, Washington, D. C., about \$800.  
Federal funds under Sheppard-Towner Act, \$15,000.

License fees from camps, roadside eating and lodging places, about \$4,000.

Publications issued by the department of health:  
Annual report on vital statistics.

## MARYLAND

### Board of health:

John S. Fulton, M. D., chairman, Baltimore.  
William H. Welch, M. D., Baltimore.  
Thomas H. Robinson, attorney general, Baltimore.

William W. Ford, M. D., Baltimore.  
C. Hampson Jones, M. D., Baltimore.  
Tolley A. Biays, Baltimore.

Benjamin C. Perry, M. D., Bethesda.  
E. F. Kelly, Phar. D., Baltimore.

### Executive health officer:

\*John S. Fulton, M. D., director of health, Baltimore.

### Division of legal administration:

\*J. Davis Donovan, chief, Baltimore.

### Division of public health education:

\*Gertrude B. Knipp, chief, Baltimore.

### Bureau of communicable diseases:

\*Robert H. Riley, M. D., chief, Baltimore.

### Bureau of vital statistics:

Frederic V. Bettler, M. D., chief, Baltimore.

### Food and drug commissioner:

\*A. L. Sullivan, B. S., chief, Baltimore.

### Bureau of bacteriology:

\*H. C. Ward, B. Ph., M. S., chief, Baltimore.

### Bureau of sanitary engineering:

\*Abel Wolman, B. S. E., Chief, Baltimore.

### Bureau of chemistry:

\*Wyatt W. Randall, Ph. D., chief, Baltimore.

### Bureau of personnel and accounts:

\*Walter N. Kirkman, chief, Baltimore.

### Bureau of child hygiene:

\*J. H. Mason Knox, jr., M.D., chief, Baltimore.

## Appropriations for fiscal year ending September 30, 1928:

Salaries.....	\$258,202
Expenses.....	122,574
Emergency appropriation (epidemics, etc.).....	10,000

Total..... 390,776

## Publications issued by health department:

Annual report.

Weekly News Letter.

## MASSACHUSETTS

### Public health council:

George H. Bigelow, M. D., chairman, Boston.  
Roger I. Lee, M. D., Boston.  
Francis H. Lally, M. D., Milford.

### Public health council—Continued.

Richard P. Strong, M. D., Boston.  
Sylvester E. Ryan, M. D., Springfield.  
James L. Tighe, Holyoke.  
Gordon Hutchins, Concord.

### Executive health officer:

\*George H. Bigelow, M. D., State commissioner of public health, Boston.

### Secretary:

\*Alice M. Ethier.

### Division of administration:

(Under direction of commissioner.)

### Division of communicable diseases:

\*Clarence L. Scamman, M. D., director, Boston.

### Division of sanitary engineering:

\*X. H. Goodnough, C. E., director and chief engineer, Boston.

### Division of water and sewage laboratories:

\*H. W. Clark, director and chemist, Boston.

### Division of biologic laboratories:

\*Benjamin White, Ph. D., director and pathologist, Boston.

### Division of food and drugs:

\*Herman C. Lythgoe, director and analyst, Boston.

### Division of hygiene:

\*Merrill E. Champion, M. D., director, Boston.

### Division of tuberculosis sanatoria:

\*Sumner H. Remick, M. D., director, Boston.

## Appropriations for department of public health, 1927:

### Division of administration—

Salary of commissioner.....	\$7,500
Personal services.....	19,900
Services other than personal.....	10,000

### Division of hygiene—

Personal services of director and assistants.....	28,080
Services other than personal.....	15,500
Personal services in connection with maternal and infant hygiene.....	19,180
Expenses in connection with maternal and infant hygiene.....	9,600

### Division of communicable diseases—

Personal services of director, district health officers, etc.....	56,000
Services other than personal.....	15,250
Personal services in connection with control of venereal diseases.....	7,320
Expenses in connection with control of venereal diseases.....	21,500

### Manufacture and distribution of arspenamine—

For personal services.....	8,610
Services other than personal.....	5,850

### Wassermann Laboratory—

For personal services.....	12,600
For expenses of laboratory.....	5,300

### Antitoxin and vaccine laboratory—

For personal services.....	50,355
Other services.....	34,500

### Inspection of food and drugs—

For personal services.....	44,000
Other services.....	11,400

## Appropriations for department of public health, 1927—Continued.

Water supply and disposal of sewage, engineering division—	
For personal services.....	60,700
For other services.....	16,000
Water supply and disposal of sewage, division of water and sewage laboratories—	
For personal services.....	35,500
For other services.....	8,200
Division of tuberculosis—	
For personal services.....	32,420
Services other than personal.....	10,000
For personal services of tuberculosis clinic units.....	36,500
Services other than personal (clinic units).....	16,700
Payment of subsidies.....	222,000
For maintenance of and for certain improvements at the Lakeville, North Reading, Rutland and Westfield State sanatoria.....	1,034,730
Special appropriations under legislative acts and resolves of 1927.....	19,500
Cancer clinics:	
For personal service.....	15,000
For other expenses.....	30,000
Cancer hospital at Norfolk:	
For maintenance.....	90,000
For completion of improvements required and for certain equipment.....	75,000
Total.....	2,085,295

## MICHIGAN

## Advisory council of health:

- C. C. Slemons, M. D., president, Grand Rapids.  
 Robert B. Harkness, M. D., Houghton.  
 Chalmers J. Lyons, D. D. Sc., Ann Arbor.  
 Leo J. Dretzka, M. D., Detroit.  
 Louis J. Hirschman, M. D., Detroit.

## Executive health officer:

- \*Guy L. Kiefer, M. D., D. P. H., State health commissioner, Detroit.

## Deputy health commissioner:

- \*Don M. Griswold, M. D., D. P. H., Lansing.

## Bureau of engineering:

- \*E. D. Rich, C. E., director.  
 \*John M. Hepler, B. S., assistant engineer.  
 \*Willard F. Shephard, B. S. E., assistant engineer.  
 \*Raymond J. Faust, B. S., assistant engineer.  
 \*Herbert H. Hasson, B. S., assistant engineer.  
 \*F. B. Ransford, water inspector.

## Bureau of laboratories:

- \*C. C. Young, Ph. D., D. P. H., director.  
 \*Minna Crooks, R. N., bacteriologist.  
 \*Shan Ming Tao, D. Sc., assistant bacteriologist.  
 \*R. L. Kahn, D. Sc., immunologist.  
 \*Pearl Kendrick, M. S., bacteriologist, West Michigan division.  
 \*Ora Mills, bacteriologist, Houghton Branch.  
 \*E. F. Eldridge, M. S., chemist.  
 \*A. B. Haw, M. S., clinical pathologist.  
 \*Newton D. Larkum, Ph. D., research bacteriologist.

## Bureau of laboratories—Continued.

- \*Charles L. Bliss, B. S., toxicologist.  
 \*Bruce Robinson, superintendent, biologic plant.

## Bureau of child hygiene and public health nursing:

- \*Lillian R. Smith, M. D., director.  
 \*Florence H. Knowlton, M. D., physician.  
 \*Rhoda Grace Hendrick, M. D., prenatal consultant.  
 \*Helen de Spelder Moore, R. N., assistant director.

## Bureau of records and statistics:

- \*W. J. V. Deacon, M. D., director.

## Bureau of education:

- \*Marjorie Delavan, director.  
 \*Pearl Turner, assistant director.  
 \*Melita Hutzel, lecturer.  
 \*Frank A. Poole, M. D., lecturer.

## Bureau of embalming:

- \*Frank J. Pienta, director.

## Bureau of epidemiology:

- \*Don M. Griswold, M. D., D. P. H., director.  
 \*A. M. Carr, M. D., medical inspector.  
 \*Paul F. Orr, M. D., medical inspector.

## Bureau of mouth hygiene:

- \*William R. Davis, D. D. S., director.

## Appropriations for fiscal year ending

June 30, 1928:

Personal service.....	\$302,650.00
Supplies.....	102,000.00
Contractual service.....	
Outlay for equipment.....	7,000.00
Total.....	311,650.00
Antitoxin operation.....	65,000.00
Child hygiene and public health nursing.....	64,741.11
Grand total.....	441,391.11

## Publications issued by health department:

- Monthly bulletin.  
 Annual report.  
 Communicable disease pamphlets.  
 Sex hygiene pamphlets.  
 Child hygiene pamphlets.  
 Engineering bulletins.  
 Mouth hygiene pamphlets.  
 Scientific reprint series.  
 Rules and regulations.  
 Health officers' manual.

## MINNESOTA

## Board of health:

- S. Marx White, M. D., president, Minneapolis.  
 L. P. Wolf, C. E., vice president, St. Paul.  
 C. L. Scofield, M. D., Benson.  
 N. M. Watson, M. D., Red Lake Falls.  
 N. G. Mortensen, M. D., St. Paul.  
 O. F. Melby, M. D., Thief River Falls.  
 W. H. Barr, M. D., Wells.  
 E. W. Fahey, M. D., St. Paul.  
 J. A. Thabes, M. D., Brainerd.

## Executive health officer, Old Capitol, St. Paul:

- \*A. J. Chesley, M. D., secretary and executive officer.

## Division of administration, Old Capitol, St. Paul:

- \*O. C. Pierson, director.



Division of vital statistics, Old Capitol, St. Paul:  
 \*Gerda C. Pierson, director.

Division of hotel inspection, Old Capitol, St. Paul:  
 \*W. A. Wittbecker, State hotel inspector.

Division of preventable diseases, university campus, Minneapolis:

\*O. McDaniel, M. D., director.

\*E. M. Wade, chief of laboratories.

\*W. P. Greene, M. D., epidemiologist.

\*Temple Burling, M. D., epidemiologist.

Division of sanitation, university campus, Minneapolis:

\*H. A. Whittaker, director.

\*O. E. Brownell, C. E., sanitary engineer.

Division of venereal diseases, university campus, Minneapolis:

H. G. Irvine, M. D., director.

Division of child hygiene, university campus, Minneapolis:

Everett C. Hartley, M. D., director.

\*Oliva Peterson, R. N., superintendent of public health nursing.

\*Mildred G. Smith, R. N., educational agent.

Appropriations for fiscal year ending June 30, 1928:

Maintenance and vital statistics—

Salaries.....\$31,530

Expenses.....7,595

\$39,115

Free antitoxin.....14,644

Venereal disease.....17,500

Sanitary engineering and laboratory...27,160

Preventable diseases and laboratory...60,856

Protection for maternity and infancy...21,000

Hotel inspection.....33,590

Total.....213,865

Publications issued by health department:

Educational pamphlets.

Laboratories:

Division of preventable diseases, division of sanitation, and division of venereal diseases each has its own laboratory service. Laboratories are housed on university campus. The division of preventable diseases also has a branch laboratory at Duluth. All are State department of health organizations exclusively.

### MISSISSIPPI

Board of health:

W. W. Crawford, M. D., president, Hattiesburg.

Felix J. Underwood, M. D., secretary, Jackson.

S. E. Eason, M. D., New Albany.

L. B. Austin, M. D., Rosedale.

J. W. Lipscomb, M. D., Columbus.

T. W. Holmes, M. D., Winona.

J. M. Dampeer, M. D., Crystal Springs.

W. H. Watson, M. D., Brandon.

Dudley Stennis, M. D., Newton.

W. R. Wright, D. D. S., Jackson.

Executive health officer:

\*Felix J. Underwood, M. D., executive officer, State board of health, Jackson.

Bureau of vital statistics:

\*R. N. Whitfield, M. D., director, Jackson.

Bureau of child hygiene and public health nursing:

\*Felix J. Underwood, M. D., acting director Jackson.

\*Mary D. Osborne, R. N., supervisor, public health nursing, Jackson.

\*Gladys Eyrich, supervisor oral hygiene.

Hygienic laboratory:

\*T. W. Kemmerer, M. D., director, Jackson.

Bureau of sanitary engineering and inspection:

\*H. A. Kroeze, C. E., director, Jackson.

\*Geo. Parker, C. E., malarial control engineer, Jackson.

\*N. M. Parker, D. V. S., State sanitary inspector, Jackson.

Bureau of county health work:

\*C. C. Applewhite, M. D., director, Jackson.

Bureau of communicable diseases:

\*Hardie Hayes, M. D., director, Jackson.

Appropriations for fiscal year ending Dec.

31, 1927:

Administrative office.....\$20,700

Bureau of vital statistics.....12,000

Municipal sanitation.....10,800

Rural sanitation.....34,300

Hygienic laboratory.....20,000

Child welfare.....27,000

Communicable diseases.....10,000

Total.....134,800

Publications issued by health department:

Biennial report.

Weekly health letters published in all newspapers of the State.

Laboratory is not connected with an educational institution.

### MISSOURI

Board of health:

W. A. Clark, M. D., president, Jefferson City.

H. L. Kerr, M. D., vice president, Crane.

James Stewart, M. D., secretary, Jefferson City

H. S. Gove, M. D., Linn.

H. A. Breyfogle, M. D., Kansas City.

T. E. McGough, M. D., Richmond.

Willard C. Bartlett, M. D., St. Louis.

Executive health officer:

\*James Stewart, M. D., State health commissioner, Jefferson City.

\*Irl Brown Krause, M. D., assistant State health commissioner.

Rural sanitation:

\*Joseph Mountin, M. D., director.

Epidemiology:

\*R. L. Russell, M. D., assistant epidemiologist.

\*R. L. Laybourn, bacteriologist.

Sanitary engineering:

\*W. Scott Johnson, chief engineer.

Vital statistics:

\*Ross Hopkins, M. D., statistician.

Child hygiene:

\*Irl Brown Krause, M. D., director.

## Appropriations for biennial period ending

Dec. 31, 1928:

Board of health—	
Licensure.....	\$20,000
Salaries.....	85,800
Contingent.....	32,000
Cooperative health work.....	100,000
Control of contagion.....	50,000
Total.....	287,800

Of the above appropriation, \$47,000 is being withheld by the governor until State revenues are sufficient for release.

## MONTANA

## Board of Health:

B. L. Pampel, M. D., president, Livingston.  
George M. Jennings, M. D., vice president, Missoula.  
E. M. Porter, M. D., Great Falls.  
L. H. Fligman, M. D., Helena.  
E. G. Balsam, M. D., Billings.

## Executive health officer:

\*W. F. Cogswell, M. D., secretary, Helena.

## Division of communicable diseases:

\*W. F. Cogswell, M. D., director, Helena.

## Division of child welfare:

\*Hazel Dell Bonness, M. D., director, Helena.

## Division of food and drugs:

\*Glenn D. Wiles, director, Helena.

## Division of vital statistics:

\*W. F. Cogswell, M. D., State registrar, Helena.

\*L. L. Benepe, deputy State registrar, Helena.

## Division of water and sewage:

\*H. B. Foote, director, Helena.  
W. M. Cobleigh, consultant, Bozeman.  
\*E. L. Grant, analyst, Helena.

## Hygienic laboratory:

\*Fred D. Stimpert, director, Helena.  
\*Edith Kuhns, technician, Helena.

## Appropriations for the years ending June

30, 1928, and June 30, 1929:

Salaries.....	\$24,900
Operating expenses.....	8,900
Capital expenditures.....	200
Repairs.....	75
Division child welfare.....	10,700
Board of entomology (Rocky Mountain spotted-fever work).....	23,320
Spotted-fever laboratory.....	60,000
Total.....	126,095

## Other sources of revenue:

All fees collected by State board of health.  
Rockefeller Foundation, \$3,650.

## Publications issued by health department:

Special bulletins on communicable diseases.  
Biennial report.

The State board of health laboratory is located in the State board of health building at Helena.

## NEBRASKA

## Department of public welfare:

Lincoln Frost, secretary, Lincoln.

## Bureau of health—

## Executive health officer—

\*W. H. Wilson, M. D., chief, bureau of health, Lincoln.

## Collaborating epidemiologist—

\*W. H. Wilson, M. D., Lincoln.

## Assistant epidemiologist—

\*P. H. Bartholomew, M. D., Lincoln.

## Bacteriologist—

\*L. O. Vose, Lincoln.

## Division of laboratories—

\*L. O. Vose, director, Lincoln.

## Division of venereal diseases—

\*P. H. Bartholomew, M. D., director, Lincoln.

## Statistician—

\*Hattie M. Summers, Lincoln.

## Division of child hygiene—

\*Louise M. Murphy, R. N., director, Lincoln.

## Medical examining board—

J. E. Spatz, M. D., Fairfield.  
H. J. Lehnhoff, M. D., Lincoln.  
E. T. McGuire, M. D., Mead.

## Appropriations for biennial period ending June 30, 1929:

Salaries.....	\$42,000
Maintenance.....	22,800
Total.....	64,800

The laboratory is not connected with an educational institution.

## NEVADA

## State board of health:

F. B. Balzar, governor, president, Carson City.  
Edward E. Hamer, M. D., secretary and State health officer, Carson City.  
W. G. Greathouse, secretary of State.

## Executive health officer:

Edward E. Hamer, M. D., Carson City.

## State hygienic laboratory at State university:

\*Vera E. Lautenschlager, acting director, Reno.

## Appropriations for 1927 and 1928:

Salary of secretary.....	\$5,000
For State board of health.....	3,600
For purchase of diphtheria antitoxin for free distribution.....	500
Total.....	9,100

## Publications issued by health department:

Biennial report.  
Special bulletins.

## NEW HAMPSHIRE

## Board of health:

Robert Fletcher, C. E., president, Hanover.  
D. E. Sullivan, M. D., Concord.  
George C. Wilkins, M. D., Manchester.  
Sibley G. Morrill, M. D., Concord.  
Huntley M. Spaulding, governor.  
Jeremy M. Waldron, attorney general, Portsmouth.

## Executive health officer:

\*Charles Duncan, M. D., secretary, State board of health, Concord.

\*Harriet I. Parkhurst, chief clerk, Concord.

## Division of maternity, infancy, and child hygiene:

\*Mary D. Davis, R. N., director and supervising nurse, Manchester.

## Department of vital statistics:

\*Charles Duncan, M. D., registrar, Concord.

\*Bertha M. Watson, chief clerk, Concord.

## Division of chemistry and sanitation:

\*Charles D. Howard, chief of division, Concord.

\*Nathan Civen, assistant chemist, Concord.

\*Herbert R. Hill, assistant chemist and bacteriologist, Concord.

\*Leonard W. Trager, assistant sanitary engineer, Concord.

\*Joseph X. Duval, chief inspector, Concord.

## Diagnostic and pathological department—

\*William R. McLeod, serologist and diagnostic bacteriologist, Concord.

H. N. Kingsford, M. D., pathologist, Hanover.

\*Benj. Jewell, assistant in pathological laboratory, Concord.

## Venereal-disease division:

\*Charles A. Weaver, M. D., Manchester.

## Appropriations for fiscal year ending June

30, 1928:

State board of health..... \$36, 038

Laboratory of hygiene..... 16, 300

Vital statistics..... 6, 050

Total..... 59, 288

## Publications issued by health department:

Bulletin.

Biennial report.

Laboratory is not connected with any educational institution.

## NEW JERSEY

## Board of health:

Clyde Potts, C. E., president, Morristown.

Charles I. Lafferty, vice president, Atlantic City.

David D. Chandler, Newark.

H. E. Winter, V. M. D., Plainfield.

J. Oliver McDonald, M. D., Trenton.

Harold J. Harder, C. E., Paterson.

S. A. Cosgrove, M. D., Jersey City.

Mrs. Helen M. Berry, Newark.

Miss Margaret McNaughton, Jersey City.

J. E. H. Guthrie, D. D. S., Newark.

J. Lynn Mahaffey, M. D., Camden.

## Executive health officer:

\*David C. Bowen, director of health, Trenton.

## Bureau of bacteriology:

\*John V. Mulcahy, chief, Trenton.

## Bureau of chemistry:

\*John E. Bacon, chief, Trenton.

## Bureau of administration:

\*Charles J. Merrell, chief, Trenton.

## Bureau of food and drugs:

\*Walter W. Scofield, chief, Trenton.

## Bureau of child hygiene:

Julius Levy, M. D., consultant, Trenton.

## Bureau of local health administration:

\*David C. Bowen, chief, Trenton.

## Bureau of engineering:

\*H. P. Croft, chief, Trenton.

## Bureau of vital statistics:

\*David S. South, chief, Trenton.

## Bureau of venereal disease control:

A. J. Casselman, M. D., consultant, Trenton.

## Appropriations for fiscal year ending June

30, 1928:

Salaries..... \$184, 750

Miscellaneous..... 55, 200

Child hygiene..... 94, 000

Venereal disease control..... 28, 240

Total..... 302, 190

## Publications issued by health department:

Monthly bulletin.

Annual report.

## NEW MEXICO

## Board of public welfare:

R. O. Brown, M. D., chairman, Santa Fe.

Mrs. Francis C. Wilson, vice chairman, Santa Fe.

Mrs. Alice M. Shortle, secretary, Albuquerque.

Joseph Gill, Albuquerque.

H. A. Miller, M. D., Clovis.

## Executive health officer:

\*G. S. Luckett, M. D., director of public health, Santa Fe.

## Division of preventable diseases:

\*G. S. Luckett, M. D., chief, Santa Fe.

## Division of vital statistics:

\*P. M. Ruleau, chief, Santa Fe.

## Division of sanitary engineering and sanitation:

\*Paul S. Fox, M. S. in C. E., chief, Santa Fe.

## Division of public health nursing and child hygiene:

\*Dorothy R. Anderson, R. N., Santa Fe.

## Division of county health work:

\*D. B. Williams, M. D., chief, Santa Fe.

## Public health laboratory:

\*Myrtle Greenfield, M. S., chief, Albuquerque.

Appropriation for years 1928 and 1929, per annum, \$28,000. Fiscal year ends June 30.

The public health laboratory is located at the University of New Mexico, is furnished quarters, light, heat, and electric current by the University, but is otherwise maintained by the State bureau of public health. Its staff does not engage in teaching.

## NEW YORK

## Public health council:

Simon Flexner, M. D., LL. D., chairman, New York.

Homer Folks, LL. D., vice chairman, Yonkers.

Edward H. Marsh, M. D., secretary, Albany.

Henry N. Ogden, C. E., Ithaca.

Frederick F. Russell, M. D., New York.

## Public health council—Continued.

Jacob Goldberg, M. D., Buffalo.

Stanton P. Hull, M. D., Petersburg.

Matthias Nicoll, Jr., M. D., (ex officio) commissioner of health, Albany.

## Executive health officer:

\*Matthias Nicoll, Jr., M. D., commissioner of health, Albany.

## Deputy commissioner of health:

\*Paul B. Brooks, M. D., Albany.

## Secretary:

\*Edward H. Marsh, M. D., Albany.

## Executive officer:

\*Fenimore D. Beagle, Albany.

## Division of public health education:

\*B. R. Rickards, S. B., director, Albany.

## Division of sanitation:

\*Charles A. Holmquist, C. E., director, Albany.

## Division of vital statistics:

\*Joseph V. De Porte, Ph. D., director, Albany.

## Division of child hygiene:

\*Elizabeth M. Gardiner, M. D., director, Albany.

## Division of communicable diseases:

\*Edward S. Godfrey, M. D., director, Albany.

## Division of tuberculosis:

\*Robert Plunkett, M. D., director, Albany.

## Division of social hygiene:

\*Albert Pfeiffer, M. D., director, Albany.

## Division of laboratories and research:

\*Augustus B. Wadsworth, M. D., director, Albany.

## Division of public health nursing:

\*Mathilde S. Kuhlman, R. N., director, Albany.

## Institute for the study of malignant disease, Buffalo, N. Y.:

Burton T. Simpson, M. D., director.

## Appropriations for fiscal year ending June 30, 1928:

Personal service.....	\$1,023,380.00
Maintenance and operation.....	477,000.00
For State aid to county laboratories.....	110,000.00
Investigation of oyster beds.....	5,000.00
State aid to county health activities.....	91,733.00
Physically handicapped children.....	20,000.00

Total..... 1,727,113.00

## Other sources of revenue:

Fees from certified transcript of birth, death, and marriage certificates, \$1,561 per annum.

Licensing laboratories, \$379.

Sale of serums, \$3,035.

Licensing embalmers and undertakers (six months) \$3,599.

## Publications issued by health department:

Weekly Health News.

Monthly Vital Statistics Review.

Annual Report.

## NORTH CAROLINA

## Board of health:

\_\_\_\_\_, president.

Thomas E. Anderson, M. D., Statesville.

A. J. Crowell, M. D., Charlotte.

E. J. Tucker, D. D. S., Roxboro.

## Board of health—Continued.

Cyrus Thompson, M. D., Jacksonville.

D. A. Stanton, M. D., High Point.

James P. Stowe, Ph. G., Charlotte.

John B. Wright, M. D., Raleigh.

L. E. McDaniel, M. D., Jackson.

## Executive health officer:

\*Charles O'H. Laughinghouse, M. D., secretary-treasurer and State health officer, Raleigh.

\*Ronald B. Wilson, assistant secretary, Raleigh.

## Laboratory of hygiene:

\*C. A. Shore, M. D., director, Raleigh.

## Deputy State registrar:

\*F. M. Register, M. D., Raleigh.

## Bureau of engineering and inspection:

\*H. E. Miller, C. E., director, Raleigh.

## Bureau of maternity and infancy:

\*George Collins, M. D., director, Raleigh.

## Bureau of health education:

\*G. M. Cooper, M. D., director, Raleigh.

## Bureau of county health work:

\*C. N. Sisk, M. D., director, Raleigh.

## Bureau of epidemiology:

\*H. A. Taylor, M. D., Raleigh.

## Appropriations for fiscal year ending June 30, 1928:

Administration.....	\$52,500
Vital statistics.....	31,400
Laboratory of hygiene.....	70,000
School inspection.....	60,000
County health work.....	106,000
Epidemiology.....	12,500
Maternity and infancy.....	22,290
Engineering and inspection.....	60,000
Health education.....	11,740
Malaria control and survey.....	15,000

Total..... 441,400

## Other sources of revenue:

International health board..... 10,000

Federal Government..... 33,000

Fees paid the laboratory..... 32,000

## Publications issued by health department:

Monthly bulletin: The Health Bulletin.

Special bulletins.

Biennial report.

## NORTH DAKOTA

## Advisory health council:

Bertha R. Palmer, superintendent public instruction, ex officio, Bismarck.

J. Grassick, M. D., president North Dakota Tuberculosis Association, ex officio, Grand Forks.

Arne Oftedal, M. D., Fargo.

Fannie Dunn Quain, M. D., Bismarck.

R. S. Towne, D. D. S., Bismarck.

## Executive health officer:

\*A. A. Whittemore, M. D., State health officer, Bismarck.

## Child hygiene and public health nursing:

\*Maysell M. Williams, M. D., director, Bismarck.

## Bureau of venereal diseases:

\*F. R. Smyth, acting assistant surgeon, U. S. P. H. S., director, Bismarck.

## Bureau of vital statistics:

\*Myrtle C. Lee, director.

## Appropriations for biennial period ending

June 30, 1927:

## Salaries—

State health officer, per year.....	\$3,600
Clerical assistants, per year.....	8,200
Maintenance.....	6,000
Maternity and child hygiene, per year.....	1,500
Appropriation for venereal disease work, per year.....	4,200

Laboratories are connected with the university.

## OHIO

## Public health council:

John E. Monger, M. D., chairman, Columbus.  
James E. Bauman, secretary.  
G. D. Lummis, M. D.  
C. O. Probst, M. D.  
R. M. Calfee.  
W. I. Jones, D. D. S.

## Executive health officer:

\*John E. Monger, M. D., director of health,  
Columbus.

## Assistant director of health:

\*James E. Bauman.

## Division of administration:

\*James E. Bauman, chief.

\*C. A. Orrison, chief clerk.

## Bureau of publicity—

\*Paul Mason, director.

## Bureau of local health organization—

\*E. R. Shaffer, M. D., chief.

## Division of communicable diseases:

\*C. P. Robbins, M. D., chief.

\*T. W. Mahoney, M. D., chief epidemiologist.

## Bureau of venereal diseases—

\*C. P. Robbins, M. D., chief.

## Bureau of trachoma clinics—

\*R. B. Tate, M. D., chief.

## Division of sanitary engineering:

\*F. H. Waring, chief.

## Bureau of plumbing inspection—

\*A. A. Manchester, chief.

## Division of laboratories:

\*Fred Berry, chief.

## Division of vital statistics:

\*Irvin C. Plummer, chief.

## Division of hygiene:

\*J. A. Frank, M. D., chief.

## Bureau of tuberculosis—

H. M. Austin, M. D., chief.

## Bureau of hospitals—

\*James A. Wels, chief.

## Division of child hygiene:

Bureau of public health education—  
\*A. B. Lippert, M. D., chief.

## Division of public health nursing:

\*Zoe McCaleb, R. N., chief.

## Division of industrial hygiene:

E. R. Hayhurst, M. D., consultant.

## Appropriations for 18 months ending

Dec. 30, 1928:

Personal service.....	\$295,730.00
Maintenance.....	197,923.88
State aid for health districts.....	375,000.00

Total.....868,653.88

## Publications issued by health department:

Ohio Health News (semimonthly).

## OKLAHOMA

## Executive health officer:

\*O. O. Hammonds, M. D., State health commis-  
sioner, Oklahoma City.

## Assistant State health commissioner:

\*J. P. Folan, Oklahoma City.

## Bureau of vital statistics:

\*W. B. Dennis, registrar, Oklahoma City.

## Bureau of laboratories:

\*H. C. Ricks, M. D., director of laboratory.

## Bureau of maternity and infancy:

\*Lucille Spire Blachly, M. D., director.

## Bureau of venereal disease control:

A. M. Young, M. D., director.

## Bureau of rural sanitation:

\*D. T. Bowden, M. D., director.

## Bureau of sanitary engineering:

\*H. J. Darcey, director.

## Bureau of public health education:

\*G. Harrison, director.

## Bureau of epidemiology:

\*G. F. Mathews, M. D.

Appropriations for fiscal year ending June  
30, 1928:

## Administration—

Commissioner.....	\$3,600
Assistant commissioner.....	2,400
Secretary and stenographer.....	1,800
Bookkeeper.....	2,000

Stenographers (1 at \$1,800, 1 at  
\$1,500, and 1 at \$1,200).....4,500

## Bureau of public health education—

Director.....	2,400
Stenographer.....	1,500

## Bureau of diagnostic laboratory—

Chemist.....	3,000
Assistant chemist.....	2,400
Bacteriologist.....	3,000
Assistant bacteriologist.....	2,400
Record clerk.....	1,800

Extra help—manufacture of typhoid  
vaccine—janitor.....2,500

## Bureau of sanitary engineering—

Engineer.....3,000

Bureau of pure food, drugs, and sani-  
tary inspection—

Supervisor (sanitary engineer).....	2,400
Inspectors (4 at \$1,800 each).....	7,200

## Bureau of vital statistics—

Registrar.....	2,400
Assistant registrar.....	1,800

Statistical clerks (3 at \$1,500 each).....4,500

## Bureau of maternity and infancy—

Director (physician).....	3,000
Stenographer.....	1,500

Head nurse.....2,400

Field nurses (4 at \$1,800 each).....7,200

Contingent aid to county health  
units.....5,000

## All bureaus—

Traveling.....	14,000
Communication.....	2,500

Printing, other than office supplies.....3,000

For expense of operation of labora-  
tory.....2,100

Office supplies.....1,000

Medical supplies.....6,000



# Appropriations for fiscal year ending June 30, 1928—Continued.

All bureaus—Continued.	
Supplies for the manufacture of vaccines.....	500
Office equipment.....	750
Laboratory equipment.....	600
Motor vehicle.....	800
Unallocated appropriations—	
Bureau for control of venereal diseases.....	7,000
Bureau of epidemiology disease prevention.....	5,000
Rural sanitation, mouth hygiene, and disease prevention in rural district and county health units.....	21,575
Control of malaria.....	5,000
Total.....	143,525

## OREGON

### Board of health:

W. B. Morse, M. D., president, Salem.  
 E. B. Pickel, M. D., vice president, Medford.  
 Frederick D. Stricker, M. D., secretary and State health officer, Portland.  
 W. T. Phy, M. D., Hot Lake.  
 J. H. Rosenberg, M. D., Prineville.  
 C. J. Smith, M. D., Portland.  
 Harold C. Bean, M. D., Portland.

### Executive health officer:

\*Frederick D. Stricker, M. D., secretary and State health officer, Portland.

### Registrar of vital statistics:

\*Frederick D. Stricker, M. D., Portland.

### Division of child hygiene and public health nursing:

\*Mrs. Glendora Blakely, R. N., Portland.

### Director of laboratory:

\*William Levin, D. P. H., Portland.

Appropriations for fiscal year ending December 31, 1927, \$44,765.

### Publications issued by health department:

Annual report.  
 Biennial report.  
 Pamphlets and posters.  
 Weekly letter.

## PENNSYLVANIA

### Department of health:

#### Advisory board—

A. A. Cairns, M. D., Philadelphia.  
 S. R. Haythorn, M. D., Pittsburgh.  
 J. M. Wainwright, M. D., Scranton.  
 H. C. Fronts, M. D., Huntingdon.  
 C. B. Auel, East Pittsburgh.  
 Charles F. Mebus, C. E., Abington.

#### Executive health officer—

\*Theodore B. Appel, M. D., secretary of health, Harrisburg.  
 \*William G. Turnbull, deputy secretary of health, Harrisburg.

#### Bureau of sanatoria and State clinics—

\*William G. Turnbull, M. D., Harrisburg.  
 Section State clinics—  
 \*William C. Miller, M. D., Mechanicsburg.

#### Mont Alto sanatorium—

\*R. H. McCutcheon, M. D., medical director, Mont Alto.

### Department of health—Continued.

#### Bureau of sanatoria and State clinics—Con.

##### Cresson sanatorium—

\*T. H. A. Stites, M. D., medical director, Cresson.

##### Hamburg sanatorium—

\*Henry A. Gorman, M. D., medical director, Hamburg.

#### Bureau of communicable diseases—

\*J. Moore Campbell, M. D., Harrisburg.

##### Section of epidemiology—

\*J. Moore Campbell, M. D.

##### Tuberculosis section—

##### Genito-urinary section—

\*Edgar S. Everhart, M. D., Lemoyne.

##### Section of restaurant hygiene—

\*Howard M. Haines, Harrisburg.

#### Bureau of engineering—

\*W. L. Stevenson, C. E., chief engineer, Harrisburg.

##### Section sanitary engineering—

\*H. E. Moses, Harrisburg.

##### Section of housing—

\*H. F. Bronson, Harrisburg.

##### Section milk control—

\*Ralph E. Irwin, Camp Hill.

##### Section industrial waste—

\*F. E. Daniels, Harrisburg.

#### Bureau of child health—

\*J. Bruce McCreary, M. D., Shippensburg.

##### School section—

\*J. Bruce McCreary, M. D.

##### Pre-school section—

\*Mary Riggs Noble, M. D.

##### Dental section—

\*C. J. Hollister, D. D. S.

#### Bureau of finance—

\*Clinton T. Williams, Harrisburg.

##### Section of accounts—

\*C. T. Williams.

##### Purchasing section—

\*L. G. Owens, Harrisburg.

##### Section of supplies—

\*Roy G. Miller, Harrisburg.

#### Bureau of vital statistics—

\*Emlyn Jones, M. D., Johnstown.

#### Bureau of laboratories—

\*John L. Laird, M. D., Philadelphia.

#### Bureau of drug control—

\*James N. Lightner, L.L. B., Lancaster.

#### Bureau of nursing—

\*Alice M. O'Halloran, R. N., Harrisburg.

#### Bureau of inspection—

\*James Duffy, Marietta.

#### Bureau of public health education—

\*J. C. Funk, L.L. B., Harrisburg.

Appropriations for biennial period ending June 1, 1929:

General health purposes.....	\$4,770,000
Construction crippled children's hospital.....	350,000
Sanitary water board.....	100,000

Total..... 5,270,000

Laboratories are not connected with any university.

## PHILIPPINE ISLANDS

## Director of health:

Jacobo Fajardo, M. D., Manila.

## Council of hygiene, advisory board to the director of health:

Fernando Calderon, M. D., president, Manila.

Regino G. Padua, M. D., secretary, Manila.

José Fabella, M. D., Manila.

Gervasio Ocampo, M. D., Manila.

José Albert, M. D., Manila.

Benito Valdes, M. D., Manila.

Eulogio P. Revilla, LL. B., Manila.

Tomas Earnshaw, Manila.

## Executive officer:

\*Jacobo Fajardo, M. D., Manila.

## Assistant to the director:

\*Regino G. Padua, M. D., Manila.

## Office of records and finance:

\*Mamerto Tlanco, chief, Manila.

## Office of property:

\*Bonifacio Mencias, M. D., acting chief, Manila.

## Office of vital statistics:

\*José Guidote, M. D., chief, Manila.

## Office of general inspection:

\*Rafael Villafranca, M. D., chief, Manila.

## Public health education and publicity:

\*José P. Bantug, M. D., chief, Manila.

## Public health nursing:

\*Rosario Pastor, M. D., chief, Manila.

## Division of communicable diseases:

\*Leoncio Lopez Rizal, M. D., chief, Manila.

## Division of metropolitan sanitation:

\*Eugenio Hernandez, M. D., chief, Manila.

## Division of hospitals, dispensaries, and laboratories:

\*Eusebio D. Aguilar, M. D., chief, Manila.

## Culion Leper Colony:

\*Sulpicio Chiyeto, M. D., chief, Manila.

## Division of provincial sanitation:

\*Gabriel Intengan, M. D., chief, Manila.

## Office of sanitary engineering:

\*Manuel Mañosa, C. E., chief, Manila.

## Appropriations for fiscal year ending December 31, 1927:

Salaries and wages.....	\$928,242
Miscellaneous expenses.....	1,788,570
Furniture and equipment.....	25,000

## Special expenses—

Purchase of an ambulance, refrigerator, tank, and pump for San Lazaro Hospital..... \$15,000

Continuation of treatment of segregated lepers..... 250,000

Aid to specially organized Provinces..... 436,600

School of nursing in Baguio..... 10,000

Medicines, medical and surgical supplies for distribution to public-school dispensaries.... 5,000

## Appropriations for fiscal year ending December 31, 1927—Con.

## Special expenses—Continued.

Demonstration on practical control of malaria and beriberi and improvement of organization and operation of sanitation in connection with the sum allotted for this purpose by the Rockefeller foundation..... 25,000

Contribution to the University of the Philippines for the operation of the School of Sanitation and Public Health..... 20,000

Control of malaria in the regularly and specially organized Provinces and municipalities and municipal districts.... 100,000

Total for special expenses..... 861,600

Grand total of appropriations..... 3,608,412

## Publications issued by the Philippine health service:

Daily Service News.

Weekly comparative epidemiological résumé.

Weekly résumé of births and deaths.

Monthly bulletin.

Annual report.

Occasional pamphlets.

Laboratory is located at the San Lazaro Hospital, Manila, and not connected with the State university or any other similar educational institution.

## PORTO RICO

## Insular board of health:

Gustavo Muñoz Diaz, M. D., president, San Juan.

Louis B. de la Vega, M. D., secretary, San Juan.

Angel M. Pesquera, pharmacist, San Juan.

W. A. Glines, M. D., San Juan.

A. Martinez Alvarez, M. D., San Juan.

José López Acosta, San Juan.

G. A. Ramirez de Arellano, San Juan.

M. Roses Artau, M. D., San Juan.

## Executive health officer:

\*Pedro N. Ortiz, M. D., commissioner of health, San Juan.

\*A. Fermós Isern, M. D., assistant commissioner of health, San Juan.

## Division of property and accounts:

\*Abelardo Santiago, chief, San Juan.

## Division of sanitary engineering:

\*Octavio Marciano, sanitary engineer, San Juan.

## Bacteriological laboratory:

\*Pablo Morales Otero, M. D., director, San Juan.

## Chemical laboratory:

\*R. del Valle Sárraga, chemist, director, San Juan.

## Division of transmissible diseases:

\*M. O. de la Rosa, M. D., chief, San Juan.

## Bureau of statistics:

\*Manuel A. Perez, chief, San Juan.

Appropriations for each of the fiscal years ending June 30, 1928, and June 30, 1929:

Office of the commissioner of health.....	\$276,490.00
Leper hospital.....	34,166.50
Quarantine hospital.....	12,684.00
Antituberculosis sanatorium of Porto Rico.....	139,144.00
Blind asylum.....	41,060.00
Institute for blind children.....	25,080.00
Insane asylum.....	116,235.00
Education and maintenance of poor deaf and dumb children.....	1,200.00
Care of tubercular patients in the sanatorium at Ponce under the control of the department of health.....	15,000.00
Control and prevention of tuberculosis.....	75,000.00
Control and prevention of venereal diseases.....	12,000.00
Prevention of infantile mortality.....	50,000.00
Extermination of mosquitoes and control and suppression of malaria.....	50,000.00
Suppression of anemia.....	150,000.00
Extermination of rats.....	20,000.00
Control and suppression of infantile tetanus and ophthalmia neonatorum.....	2,000.00
Emergency fund for the control and suppression of epidemics.....	10,000.00
Girls' charity school.....	84,178.00
Boys' charity school.....	112,131.00
Sanitation fund, trust fund.....	164,100.82
Total.....	1,390,469.32

## RHODE ISLAND

## Board of health:

William F. Williams, M. D., president, Bristol.  
Joseph M. Bennett, M. D., vice president, Providence.

Thomas J. McLaughlin, M. D., Woonsocket.

John Champlin, Jr., M. D., Westerly.

Berton W. Storrs, M. D., Portsmouth.

M. S. Budlong, M. D., Providence.

R. Morton Smith, M. D., Riverpoint.

## Executive health officer:

\*B. U. Richards, M. D., secretary, State board of health, State commissioner of health, and State registrar, Statehouse, Providence.

## Pathologist:

Lester A. Round, Ph.D., Providence.

## Chemist:

Stephen De M. Gage, Providence.

## Appropriations for fiscal year ending Nov. 30, 1926:

Executive department.....	\$30,000
Chemical laboratory.....	18,000
Pathological laboratory.....	20,000
Child welfare.....	10,000
Venereal diseases.....	10,000

Total..... 88,000

Laboratory of State board of health is not connected with any institution.

## SOUTH CAROLINA

## Executive committee, board of health:

Robert Wilson, Jr., M. D., chairman, Charleston.

L. D. Boone, M. D., Langley.

Davis Furman, M. D., Greenville.

E. A. Hines, M. D., Seneca.

W. R. Wallace, M. D., Chester.

Wm. Egleston, M. D., Hartsville.

Safr. Hodges, Ph. G., Greenwood.

F. M. Routh, M. D., Columbia.

George Dick, D. D. S., Sumter.

Jno. M. Daniel, Atty. Gen., Columbia.

A. J. Beattie, Compt. Gen., Columbia.

## Executive health officer:

\*James A. Hayne, M. D., State health officer, Columbia.

## Department of county health units:

\*Ben F. Wyman, M. D., director, Columbia.

## Bureau of child hygiene:

\*Miss Ada Taylor Graham, R. N., supervisor of public health nursing, Columbia.

## Laboratory department:

\*H. M. Smith, M. D., in charge, Columbia.

\*J. R. Cain, chief bacteriologist, Columbia.

## Bureau of vital statistics:

\*C. W. Miller, chief clerk, Columbia.

## Bacteriologist and chemist:

F. L. Parker, Jr., M. D., Ph. D., Columbia.

## South Carolina Sanatorium:

\*Ernest Cooper, M. D., superintendent, Columbia.

## Epidemiologist:

\*A. H. Hayden, M. D., Columbia.

## Sanitary engineer:

\*A. E. Legare, C. E., Columbia.

## Appropriations for fiscal year ending

Dec. 31, 1927:

Administrative office.....	\$53,205.30
Bureau of child hygiene.....	13,000.00
Bureau of vital statistics.....	7,985.00
Laboratory.....	11,830.00
Bureau of rural sanitation.....	27,255.44
Division of sanitary engineering.....	23,420.00
Tuberculosis sanatoria.....	88,350.00
Hotel inspection.....	1,380.00
Aid for crippled children.....	10,000.00
Child placing bureau.....	16,350.00

Total..... 252,775.74

## Publications issued by health department:

Annual report.

Bulletins of various departments.

**SOUTH DAKOTA****Board of health:**

F. E. Clough, M. D., president, Lead.  
 A. C. Clark, M. D., vice president, Woonsocket.  
 H. R. Kenaston, M. D., Bonesteel.  
 P. B. Jenkins, M. D., superintendent, Waubay.

**Executive health officer:**

\*Park B. Jenkins, M. D., Waubay.

**Division of vital statistics:**

\*Park B. Jenkins, M. D., Waubay.

**Division of records and accounts:**

\*Edna Jenkins.

**Division of medical licensure:**

H. R. Kenaston, M. D.

**Laboratories: (at Vermillion).**

J. C. Ohlmacher, M. D.

**Division of child hygiene:**

Florence E. Walker, R. N.

Appropriations:	1927-28	1928-29
Salaries and wages.....	\$17,100	\$17,100
Supplies and materials.....	2,500	2,500
Communication and travel..	4,000	4,000
Printing, binding, and advertising.....	1,500	1,500
Light and power.....	250	250
Rents.....	1,500	1,500
Dues.....	50	50
Crippled children.....	2,500	2,500
Total.....	29,400	29,400

Laboratories at Vermillion connected with State university.

**TENNESSEE****Department of public health:**

\*E. L. Bishop, M. D., C. P. H., commissioner, Nashville.

**Division of epidemiology:**

\*H. C. Stewart, M. D., C. P. H., director, Nashville.

**Division of local organization:**

\*W. K. Sharp, Jr., M. D., director, Nashville.

**Division of vital statistics:**

\*J. B. Bond, M. D., director, Nashville.

**Division of laboratories:**

\*William Litterer, M. D., director, Nashville.

**Division of sanitary engineering:**

\*Howard R. Fullerton, C. E., director, Nashville.

**Division of health education:**

\*A. F. Richards, M. D., director, Nashville.

**Division of child hygiene and public health nursing:**

\*W. J. Breeding, M. D., director, Nashville.

\*Miss M. G. Nisbet, R. N., State supervising nurse, Nashville.

**Appropriation for the fiscal period July 1,**

1927, to June 30, 1929:

General administration.....	\$31,000
Vital statistics.....	37,200
Sanitary engineering.....	36,200
Laboratories.....	47,840
Health education.....	12,400
Epidemiology.....	17,200
Local organization.....	148,400
Child hygiene and public health nursing.....	60,000
Tuberculosis control.....	90,000
Total.....	480,240

**Other sources of revenue:**

United States Department of Labor, maternity and child welfare, \$25,767.55 per annum.

International Health Board, \$22,500 (variable) per annum.

International Health Board, cooperation in malarial control, epidemiology and local organization, vital statistics. United States Public Health Service in malaria control. Individual counties and cities in State cooperation in malaria control, county health work and child hygiene and public health nursing. United States Public Health Service, cooperation in county health work, \$8,000 per annum.

State laboratory is in Nashville. Branch laboratories are maintained in East Tennessee (Knoxville); West Tennessee (Memphis); Southeast Tennessee (Chattanooga), in conjunction with city health departments.

**TEXAS****Board of health:**

J. M. Frazier, M. D., Belton  
 W. A. King, M. D., San Antonio.  
 A. A. Ross, M. D., Lockhart.  
 Joe Gilbert, M. D., Austin.  
 C. M. Rosser, M. D., Dallas.  
 E. W. Wright, M. D., Bowie.  
 J. C. Anderson, M. D., ex officio, State health officer.

**Executive health officer:**

\*J. C. Anderson, M. D., State health officer, Austin.

**Bureau of child hygiene:**

\*H. N. Barnett, M. D., director.

**Bureau of vital statistics:**

\*C. E. Durham, M. D., director.

**Bureau of communicable diseases and hygienic laboratory:**

\*Livingstone Anderson, M. D., director.

**Bureau of sanitary engineering:**

\*V. M. Ehlers, C. E., director.

**Bureau of pure foods and drugs:**

\*E. H. Golas, director.

**Appropriations for fiscal year ending**

August 31, 1928:

General fund.....	\$132,640.00
Special fund.....	77,901.04
Total.....	210,541.04

**UTAH****Board of health:**

Fred Stauffer, M. D., president, Salt Lake City.  
 T. B. Beatty, M. D., secretary, Salt Lake City.  
 Joseph R. Morrell, M. D., Ogden.  
 C. E. McDermid, M. D., Castle Gate.  
 Carl Hopkins, Ogden.  
 S. S. Burnham, D. D. S., Salt Lake City.  
 Chas. J. Ullrich, C. E., Salt Lake City.

**Executive health officer:**

\*T. B. Beatty, M. D., State health commissioner, Salt Lake City.

**Bureau of vital statistics:**

\*T. B. Beatty, M. D., State registrar.

\*Anna M. Bowen, deputy registrar.

**Bureau of child hygiene:**

\*H. Y. Richards, M. D., director.

**Epidemiologist:****Sanitary engineer:**

\*Leonard H. Male.

**Bacteriological laboratory:**

\*E. H. Bramhall, bacteriologist.

**Appropriations for year ending June 30, 1928:**

Salaries.....	\$20,000
Office expense.....	4,000
Travel.....	1,450
Equipment.....	500
Child hygiene.....	6,500
<b>Total.....</b>	<b>32,450</b>

**Publications issued by health department:**

Quarterly bulletin.

Biennial report.

Fiscal year ends June 30.

Laboratory is not connected with State university or other educational institution.

**VERMONT****Board of health:**

Edward J. Rogers, M. D., chairman, Pittsford.

William G. Ricker, M. D., St. Johnsbury.

John P. Gifford, M. D., Randolph.

**Executive health officer:**

\*Charles F. Dalton, M. D., secretary, State board of health, Burlington.

**Laboratory of hygiene:**

\*Charles F. Whitney, M. D., director, Burlington.

**Sanitary engineering:**

J. W. Votey, C. E., Burlington.

**Sanitary inspector:**

\*Fred S. Kent, M. D., Burlington.

**Division of communicable diseases:**

\*Fred S. Kent, M. D., Burlington.

**Division of tuberculosis:**

\*H. W. Slocum, Burlington.

**Division of poliomyelitis:**

\*W. L. Aycock, M. D., research, Burlington.

\*Bertha E. Weisbrod, R. N., Burlington.

**Division of maternal and infant hygiene:**

\*Nellie N. Jones, R. N., maternity, infancy, and child hygiene nurse.

**Appropriations for fiscal year ending June 30, 1927:**

Total budget, \$36,000.

**Other sources of revenue:**

Private donations for study and treatment of infantile paralysis.

Sheppard-Towner funds from Federal Government.

**Publications issued by health department:**

Biennial report.

Laboratory is not connected with an educational institution.

**VIRGINIA****Board of health:**

W. T. Graham, M. D., acting president, Richmond.

Mrs. W. M. Smith, Berryville.

Frank Darling, Hampton.

J. A. McGuire, M. D., Norton.

Guy R. Harrison, D. D. S., Richmond.

George B. Lawson, M. D., Roanoke.

L. T. Royster, M. D., Charlottesville.

**Executive health officer:**

\*Ennon G. Williams, M. D., State health commissioner, Richmond.

Assistant health commissioner and director of rural health work:

\*Roy K. Flannagan, M. D., Richmond.

**Registrar of vital statistics:**

\*W. A. Plecker, M. D., Richmond.

**Bacteriologist:**

\*A. H. Straus, Richmond.

**Sanitary engineer:**

Richard Messer, C. E., Richmond.

**Director cooperative sanitation:**

\*H. G. Grant, M. D., Richmond.

**Bureau of child welfare:**

\*Mary E. Brydon, M. D., Richmond.

**Director public health nursing:**

\*Nannie J. Minor, R. N., Richmond.

**Director mouth hygiene:**

\*N. Talley Ballou, D. D. S., Richmond.

**Director tuberculosis education:**

\*Agnes D. Randolph, R. N., Richmond.

**Epidemiologist:**

\*D. H. Anderson, M. D.

**Director social hygiene education:**

\*Mrs. F. B. Croxton, R. N., Richmond.

**Appropriations for fiscal year ending June 30, 1927:**

Administration.....	\$22,640
Sanitary engineering.....	17,070
Publicity.....	5,600
Rural health work.....	40,000
Malaria.....	5,000
Inspection of convict camps.....	3,000
Laboratory.....	19,900
Child welfare and public health nursing.....	50,000
Bureau of social hygiene.....	7,000
Control of epidemics.....	5,000
Vital statistics.....	22,495
Collection and publication of marriage and divorce statistics.....	3,076
Prevention of blindness.....	2,300
Tuberculosis education.....	23,350
<b>Total.....</b>	<b>226,431</b>

**Publications issued by health department:**

Monthly bulletin.

Annual report.

**WASHINGTON****Board of health:**

A. E. Stuht, M. D., director of health, chairman.

Clarence A. Smith, M. D., Seattle, Wash.

James H. Egan, M. D.

Samuel L. Caldwell, M. D., Everett.

John O'Shea, M. D., Spokane.

H. W. Nightingale, secretary, Seattle.

**Executive health officer:**

\*A. E. Stuht, M. D., State director of health, Seattle.

**Epidemiologist:**

\*A. U. Simpson, M. D., Seattle.

**Chief of laboratory:**

\*A. U. Simpson, M. D., Seattle.

**Sanitary engineer:**

\*H. W. Nightingale, C. E., Seattle.



**Registrar:**

\*H. W. Nightingale, C. E., Seattle.

**Division of child hygiene:**

\*A. E. Stuhlt, M. D., chief.

**Division of public health nursing:**

\*Mary Louise Allen, chief.

**Appropriation for two years ending Mar.**

31, 1929:

Operations.....	\$89,000
Division of child hygiene—Federal....	5,000
Tuberculosis hospitals (State aid to local sanatoria).....	100,000

**WEST VIRGINIA****Public health council:**

- \*H. G. Camper, M. D., president, Welch.
- W. M. Babb, M. D., Keyser.
- J. L. Pyle, M. D., Chester.
- W. S. Fulton, M. D., Wheeling.
- H. A. Barbee, M. D., Pt. Pleasant.
- B. O. Robinson, M. D., Parkersburg.
- W. T. Henshaw, M. D., commissioner of health, Charleston.

**Executive health officer:**

\*W. T. Henshaw, M. D., commissioner of health, Charleston.

**Division of sanitary engineering:**

- \*Ellis S. Tisdale, chief engineer, Charleston.
- \*John B. Harrington, assistant engineer, Charleston.
- \*Daniel W. Evans, assistant engineer, Charleston.

**Division of vital statistics:**

- \*Carl F. Raver, M. D., M. P. H., director, Charleston.
- \*Donald G. Kyle, field agent, Charleston.

**Division of child welfare and public health nursing:**

- \*Jean T. Dillon, R. N., director, Charleston.
- \*Edna M. Hardsaw, R. N., field advisory nurse, Charleston.
- \*Miss Wayne Welton, field advisory nurse, Charleston.

**Hygienic laboratory:**

- \*Chas. E. Gabel, Ph. D., director, Charleston.
- \*Harriet K. Storm, chemist, Charleston.
- \*Thomas Moore, technician, Charleston.

**Division of preventable diseases:**

- \*W. T. Henshaw, acting director.

**Bureau of venereal diseases:**

- \*David Littlejohn, acting director, Charleston.
- \*Ada L. Coddington, associate director, Charleston.

**Bureau of rural sanitation:**

- \*David Littlejohn, A. A. Surgeon, U.S.P.H.S., director, Charleston.

**Division of public health education:**

- \*Dorothea Campbell, director, Charleston.

**Appropriations for fiscal year ending June**

30, 1927:

For general use.....	\$110,000
Salary of commissioner.....	4,800
State Sheppard-Towner.....	5,000
<b>Total.....</b>	<b>119,800</b>

**Other sources of revenue:**

Fees for granting certificates to practice medicine.

Fees from laboratory work for private individuals.

Expense of cooperative work with the Federal Government: Sheppard-Towner act relating to maternal and infant hygiene, \$10,000.

**Publications issued by health department:**

Quarterly bulletin.

Annual report.

**WISCONSIN****Board of health:**

- Otho Fiedler, M. D., president, Sheboygan.
- Joseph Dean, M. D., vice president, Madison.
- L. A. Steffen, M. D., Antigo.
- J. J. Seelman, M. D., Milwaukee.
- G. Windesheim, M. D., Kenosha.
- Mina B. Glasier, M. D., Bloomington.
- C. A. Harper, M. D., health officer, Madison.

**Executive health officer:**

- \*C. A. Harper, M. D., State health officer, Madison.

**Deputy State health officers:**

- \*G. W. Henika, M. D., Madison.
- \*George E. Hoyt, M. D., Milwaukee.
- \*I. D. Wiltout, M. D., Chippewa Falls.
- \*V. A. Gudex, M. D., Oshkosh.
- \*M. S. Corlett, M. D., Rhinelander.

**Bureau of vital statistics:**

- \*C. A. Harper, M. D., State registrar, Madison.

**Bureau of communicable diseases:**

- \*F. F. Bowman, M. D., epidemiologist, Madison.
- \*H. M. Guilford, M. D., director, Madison.

**Bureau of sanitary engineering:**

- \*C. M. Baker, State sanitary engineer, Madison.
- \*L. F. Warrick, assistant sanitary engineer, stream pollution, Madison.
- \*O. J. Muegge, assistant sanitary engineer, Madison.
- \*E. J. Tully, chemical engineer, Madison.

**Bureau of education:**

- \*L. W. Bridgman, acting director, Madison.

**Bureau of child welfare:**

- \*Cora S. Allen, M. D., director, Madison.
- \*Sylvia G. Stuessy, M. D., child health physician, Madison.
- \*Charlotte Calvert, M. D., child health physician, Madison.
- \*Mrs. Gertrude S. Hasbrouck, organizer of infant hygiene classes, Madison.

**Bureau of public health nursing:**

- \*Cornelia Van Kooy, R. N., director, Madison.
- \*Edith L. Olson, R. N., field advisory nurse, Madison.

**Bureau of nursing education:**

- \*Adda Eldredge, R. N., director, Madison.

**Bureau of plumbing and domestic sanitary engineering:**

- \*Frank R. King, State domestic sanitary engineer, Madison.

**Bureau of social hygiene:**

- \*H. M. Guilford, M. D., director, Madison.
- \*Aimeé Zillmer, lecturer, Madison.

## Laboratory services:

- \*W. D. Stovall, M. D., director, State laboratories, Madison.
- \*M. S. Nichols, chemist, State laboratory, Madison.
- \*Anna Brandsmark, director branch laboratory, Rhinelander.
- \*Elizabeth Brown, director, cooperative laboratory, Beloit.
- \*Marjorie Bates, director, cooperative laboratory, Oshkosh.
- \*Henry Miller, director, cooperative laboratory, Kenosha.
- \*Josephine Foote, director, cooperative laboratory, Wausau.
- \*Mrs. Bessie Keeney, director, cooperative laboratory, Superior.
- \*Clarissa McFetridge, director, cooperative laboratory, Green Bay.

## Appropriations for fiscal year ending June 30, 1927:

General administration.....	\$54,000
Emergency appropriation for epidemics.....	7,500
Branch laboratory and State cooperative laboratories.....	9,000
Prevention of infantile blindness.....	1,500
Venereal disease control work.....	36,370
Bureau of sanitary engineering.....	14,000
Bureau of communicable diseases.....	13,300
Stream pollution work.....	15,000
Bureau of child welfare and public health nursing.....	23,000

## Appropriations for fiscal year ending June 30, 1927—Continued.

Comfort station supervision.....	\$5,000
Licensing of embalmers, hotels and restaurants, plumbers, beauty parlors, nurses, and barbers.....	57,650
Total.....	236,320

Publications issued by health department:  
Quarterly bulletin.  
Biennial report.

## WYOMING

## Board of health:

- Albert B. Tonkin, M. D., president, Riverton.
- G. L. Strader, M. D., vice president, Cheyenne.
- W. H. Hassed, M. D., secretary and executive officer, Cheyenne.
- T. E. Marshall, M. D., Sheridan.
- G. M. Anderson, M. D., Laramie.

## Executive health officer:

- \*W. E. Hassed, M. D., State health officer, Cheyenne.

## Appropriations for biennial period ending Mar. 31, 1929:

State board of health.....	\$10,600
Salary of secretary.....	8,000
Salary board members.....	400
Bureau of maternity and child hygiene.....	5,000
Total.....	24,000

Wyoming board of health does not maintain a laboratory.

## CASES OF POLIOMYELITIS REPORTED BY STATES FOR LAST THREE WEEKS OF OCTOBER, 1925, 1926, AND 1927

The following table is a continuation of the table appearing in the PUBLIC HEALTH REPORTS, October 7, 1927, page 2452, and also gives a comparison of the telegraphic reports for the last three weeks of October of the years 1925, 1926, and 1927:

*Cases of poliomyelitis reported by State health officers October 9-29, 1927, compared with reports for the corresponding weeks of 1925 and 1926*

State	Week ended—								
	Oct. 15, 1927	Oct. 16, 1926	Oct. 17, 1925	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925
Alabama.....	0	3	1	2	1	2	1	0	0
Arizona.....	6	0	1	4	0	0	1	0	0
Arkansas.....	13	2	1	2	2	0	2	0	1
California.....	26	3	10	32	6	9	30	1	4
Colorado.....	11	1	2	7	0	0	-----	0	1
Connecticut.....	8	2	0	9	1	1	9	4	0
Delaware.....	0	0	0	0	0	0	0	0	0
District of Columbia.....	2	0	1	3	0	0	-----	1	0
Florida.....	0	0	4	0	0	1	3	0	0
Georgia.....	0	0	1	1	0	2	0	0	2
Idaho.....	0	0	-----	0	0	0	2	0	-----
Illinois.....	26	6	16	37	5	15	25	4	7
Indiana.....	13	3	7	11	2	2	19	2	3
Iowa.....	5	0	13	-----	0	9	8	0	-----
Kansas.....	26	5	5	8	0	5	14	3	6

*Cases of poliomyelitis reported by State health officers October 9-29, 1927, compared with reports for the corresponding weeks of 1925 and 1926—Continued*

State	Week ended—								
	Oct. 15, 1927	Oct. 16, 1926	Oct. 17, 1925	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925
Louisiana.....	1	0	0	2	0	0	2	0	1
Maine.....	12	0	0	13	1	0	6	1	0
Maryland.....	2	1	2	2	2	19	3	1	4
Massachusetts.....	78	3	5	99	9	10	66	6	4
Michigan.....	21	0	0	18	0	0	18	0	0
Minnesota.....	5	2	23	8	0	17	6	2	18
Mississippi.....	0	0	0	2	2	0	0	1	0
Missouri.....	20	1	5	9	1	2	12	0	4
Montana.....	2	0	2	2	0	3	0	0	0
Nebraska.....	13	0	11	5	0	16	14	1	7
New Jersey.....	9	1	3	11	3	3	8	1	2
New Mexico.....	15	0	0	7	0	0	3	0	1
New York.....	38	20	32	32	23	28	31	14	6
North Carolina.....	0	5	1	1	2	1	1	2	0
North Dakota.....	1	0	3		0	3		0	1
Ohio.....	77			46			51		
Oklahoma.....	13	2	1	10	1	2	7	0	0
Oregon.....	19	1	0	31	1	0	26	1	0
Pennsylvania.....	33	12		45	9		18	3	
Rhode Island.....	2			3	2		4		0
South Carolina.....	3	7		3	3	3	2	10	4
South Dakota.....	2	0	7	5	0	2	6	0	2
Tennessee.....	3	0		7	0		2	0	
Texas.....	10	0	0	9	0	1	3	0	0
Utah.....	2	0		0	0	1	2	1	0
Vermont.....	1	0	5	7	0	5	6	0	2
Virginia.....	2	0	1	0	0	1	2	0	0
Washington.....	33	1	3	22	0	7	21	0	9
West Virginia.....	14	0	0	17	0	0	9	2	0
Wisconsin.....	12	3	14	8	5	7	9	4	14
Wyoming.....	3	1	1	1	0	0	1	0	0

## PUBLIC HEALTH ENGINEERING ABSTRACTS

**New Type of Sewage Treatment Plant at Winterset, Iowa.** T. R. Hamilton. *Western Construction News*, vol. 2, No. 11, June 10, 1927, pp. 46-48. (Abstract by E. A. Reinke.)

Plant consists of a Dorr clarifier and separate sludge digestion followed by trickling filters. The advantages claimed for the sedimentation with separate sludge digestion in place of the conventional Imhoff tank are (1) less attendance (daily inspections sufficient); (2) disagreeable work is all done by machinery.

The plant is designed for 4,000 population at an estimated flow of 60 gallons per capita per day, or 240,000 gallons daily. The cost was approximately \$38,300.

**The New Sewage Treatment Plant of Trenton, N. J.** P. N. Daniels. *Water Works*, vol. 66, No. 9, September, 1927, pp. 383-387. (Abstract by W. R. Schreiner.)

General description of \$1,243,000 plant serving combined system of sewers, and of design capacity for 150,000 population, or for 25 m. g. d. dry weather and 37.5 m. g. d. storm flow, consisting of overflow chamber, gate house, screen racks, double grit chamber, pumping station, 12 Imhoff tanks, 24 sludge-drying beds, and accessories.

Screen racks are 15 feet long and 8 feet wide, with 1-inch slots, inclined 23° from horizontal. Grit chambers are two in number, 60 feet long, 8½ feet top,

5 feet bottom width, maximum depth 5 feet; velocity regulated close to 1 foot per second by variation in pumping rate. Settled material removed by clam-shell electric locomotive crane and industrial railway dump cars with gasoline locomotive.

Imhoff tanks arranged to allow variable number in use, with flow reversible. Each tank, 114 feet long, has 28,160 cubic feet settling capacity; detention period is 3.39 hours at present average rate of flow of 18 m. g. d., 2.44 hours at 25 m. g. d., and 1.63 hours at 37.5 m. g. d. Gas vent area 19.8 per cent, sludge capacity 21,590 cubic feet, scum capacity 14,730 cubic feet. Sludge beds each 20 feet wide and 182 feet long, giving in all 0.58 square foot per capita; minimum depth 10 inches. Provision is made for removing scum from gas vents to sludge beds.

The pumping station is circular in shape, with reinforced concrete substructure and brick superstructure, housing suction well of 126,000-gallon capacity, and 6 motor-driven double-suction vertical pumps, 3 of which are constant-speed type, each 490 r. p. m., 8 m. g. d., 3 variable-speed type, each minimum 3 m. g. d., maximum 11 m. g. d. capacity, pumping against a 23-foot head, all motors operating on 2,200-volt, 3-phase, 60-cycle current. Pumps are designed for rapid hand cleaning, flushing by streams of water and by reversed flow of sewage, and other means of preventing clogging. Valves are hydraulically operated. A novel semiautomatic regulation of the rate of pumping makes possible the maintenance of sewage level in grit chamber within a maximum range of 4.7 feet.

**Sewage Plant Records.** John R. Downes. *Water Works*, vol. 66, No. 8, August, 1927, pp. 335-336. (Abstract by W. R. Schreiner.)

A discussion of the purpose of the plant records and explanations of kinds of data worthy of recording. Purpose fourfold, to show (1) plant efficiency, (2) plant effectiveness, (3) line of defense against unjust criticism, and (4) adequate information for plant improvement. Data needed include the number and kind of connections, continuous meter records of flow at outfalls, oxygen demand by methylene blue test, suspended solids, pH determinations at various points of treatments. Determination of ammonias yields little information of value. Illustration given of value of records in showing need of plant enlargement where metering had cut down per capita water consumption 20 per cent and population had increased 40 per cent. A method given in detail for converting from plant data giving "suspended solids retained" to amount of sludge to be moved.

**Limestone for Sewage Filter Beds.** (Abstract of Illinois State Geological Survey Report of Investigations No. 12, Urbana, Ill.) *Water Works*, vol. 66, No. 8, August, 1927, p. 341. (Abstract by W. R. Schreiner.)

In filter beds of sewage treatment plants limestone gravel is an important item of construction. For one town of 25,000 about 650 carloads of gravel were used. Favorable points to be considered are low porosity, with pores evenly distributed, stone firm, rough, chemically free from clay or materials which hydrate or oxidize, mechanically free from dirt or fine rock particles. Methods and tests are described in complete report referred to in title.

**How Chicago Protects Its Water Supply.** Arthur E. Gorman. *Water Works Engineering*, vol. 80, No. 16, August 3, 1927, pp. 1129-1130 and 1148-1152. (Abstract by W. L. Havens.)

This article is briefed from a paper presented before the 1927 Convention of the American Water Works Association. It describes the procedure and control in chlorinating Chicago water, this being the only safeguard against contamination. The average dose is 3.56 pounds per m. g. Meteorological data of wind, rainfall and river flow are obtained and used to forecast needs for increased dosage. All piping and equipment are in duplicate, as are the chlorinating booths in which equipment is housed to guard against interruption of service from leaks. One week's supply is maintained at the station and one month's supply in warehouse

or in process of delivery. A system of tagging governs the check in and check out of cylinders. Cylinders are cut out of service after 99 of the 100 pounds of gas have been used. Chlorine is applied to the suction well at its junction with the intake tunnel. With several pumps drawing from one well it is found that short circuiting of disinfectant is avoided if the chlorine is applied at least 30 feet from the pump suction. Control is based upon hourly tests for residual chlorine, the effort being to maintain 1 pound per m. g. in the water as it leaves the pumping station. During emergency periods, tests are run every 15 minutes or oftener. Routine tests are also made by visits to a schedule of sampling points. Check bacteriological examinations are made daily. Any change in residual as noted at any station is broadcast for the warning of other stations. During 1926 there were 47 periods of high chlorine absorption, the longest being 24 consecutive hours. Dosage has varied to a maximum of 7 pounds per m. g. Chlorine is also used to sterilize tunnel shafts and new mains. In the former the gas is applied from a hose which is raised at the rate of 2 feet per minute. In mains the section is valved off, and a noticeably heavily chlorinated water is applied through a corporation cock and flushed out of a hydrant for an hour after which the flowing water must show sterile or the process is repeated. The organization which administers this work is in the bureau of engineering. It was trained from a green personnel. A formal manual established procedure. The plan as above has been effective since 1923.

**A Program for Protecting Chicago's Land Tunnel System.** H. H. Gerstein and Arthur E. Gorman. *Journal of American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 32-43. (Abstract by D. E. Kepner.)

Prompted by marked differences between the bacterial quality of water samples collected from intakes at the lake cribs and of those from intermediate points in the tunnels between the intakes and the pumping stations, extensive investigations have been made in Chicago to locate sources of entrance of the contamination. In many instances sewage was found to be leaking from broken sewers or house drains or from faulty connections, and entering the water tunnel through cracks in the tunnel shafts. Pile driving in the vicinity of tunnel manholes was found particularly hazardous, as it injured both sewers and tunnel shafts. Protection of the tunnels against the entrance of contamination is accomplished by replacing all sewers and house drains within 50 feet of tunnel shafts with cast-iron pipe.

**Manganese in Waterworks.** C. A. H. von Wolzogen Kuhr. *Journal American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 1-31. (Abstract by D. E. Kepner.)

An investigation of the part which manganese plays in waterworks was carried out with regard to the Amsterdam dune water. Originally the manganese is dissolved in the dune water in the form of manganous sulphate and manganous bicarbonate, both of which, with hydrolysis, produce manganous hydroxide. From the dunes the water is led through canals to a reservoir, then filtered through rapid gravel filters, followed by slow sand filters. As the water passes through the gravel filters manganic dioxide is formed and adheres to the gravel particles. In case the gravel filters are by-passed, the manganic dioxide is formed and removed in the slow sand filters. (Two methods are described for determining the particular degree of oxidation of the manganese retained in the filters.)

Experiments showed that oxidation of the original manganese compounds in the dune water by chemical processes did not take place except at a pH of 10 or more; and since the normal pH of the dune water is 8.1 this was not considered the method of oxidation taking place in the filters. The finding in the water of manganese microbes which, upon cultivation, showed the capacity to oxidize



manganous salts into manganic dioxide, led to the conclusion that the action in the filters was essentially due to biochemical action.

Discussions of the paper by Messrs. Robert S. Weston, John R. Baylis, and F. E. Hale recount other investigations of manganese in water, and each state the belief that although the oxidation of manganous compounds into manganic dioxide is brought about by bacteria, it is also accomplished by chemical processes at pH values considerably under 10.

**Water Supply for the Rural Home.** W. A. Hardenbergh. *Plumbers and Heating Contractors Trade Journal*, vol. 83, No. 4, August 15, 1927, pp. 344-347. (Abstract by H. V. Pedersen.)

In this article the author has described a number of practical methods of developing a water supply for rural homes. Water supplies are classified as coming from wells, springs, cisterns, and surface waters. The sanitary construction of dug and bored wells is described and illustrated. It is recommended that wells be thoroughly pumped out frequently and that all mud, silt, moss, and debris be removed. Well-water supplies are more preferable than cisterns in that rain water is likely to have objectionable taste and odor. If plumbing is installed in the home, a cistern supply is seldom adequate.

Both the gravity and pressure systems are practical for rural use, but the author prefers the pressure system because the pressure tank can be much smaller in capacity than the gravity tank, and chances of tastes, odors, and freezing can be eliminated by placing the tank in the cellar.

Practically any kind of pump can be used in connection with rural water systems, but electrically-driven pumps are most satisfactory where electric power is available.

The remainder of the article is concerned with the flow of water in pipes, written in an elementary way, but instructive from a plumber's viewpoint.

**Water Supplies and Public Health.** A. S. M. MacGregor, *Surveyor*, vol. 72, No. 1853, July 29, 1927, p. 105. (Abstract by D. E. Kepner.)

This is a nontechnical article mentioning the improvement in public health due to better water supplies. The part that sterilization with chlorine has played is stressed, and mention is made of the efficiency of chloramine sterilization.

**Boating prohibited on Water Supply Pond.** Anon. *Water Works*, vol. 66, No. 1, January, 1927, p. 8.

The State Supreme Court of Vermont in a decision handed down last May upheld an order of the State board of health prohibiting boating on a certain pond which was a source of water supply of the city of Montpelier, Vt. The defendant was convicted of violating the order. This order, which was adopted by the board under statutory authority to make regulations to prevent the pollution of waters used for public water supply, was upheld by the supreme court.

**Über die Desinfektionswirkung von Chloramin (V. Heyden).** (Disinfecting Action of Chloramin.) Adolf Koser. (*Centralbl. Bakt. (etc.) Abt. 1, Orig.* 99 (1/3): 164-171, 1926.) Abstract by B. Cohen in *Biological Abstracts*, vol. 1, No. 4, June, 1927, pp. 508-509.

The sodium salt of p-toluolsulphonchloramin sold under the trade name of "chloramin" (von Heyden) was found to contain about 25 per cent of chlorine that could be liberated by the addition of HCl. Aqueous solutions of chloramin of 0.25-10.0 per cent preserved in dark bottles maintain their chlorine content for at least 15 days. A dilution of 1:500 prevents the multiplication of *Bact. coli* and *Staph. pyogenes aureus* in favorable culture media. In thick bacterial suspensions, 0.5 per cent chloramin destroys *Bact. coli* within 1 minute and *staphylococci* in 30 minutes. A 2 per cent solution is necessary to kill *staphylococci* in

5 minutes. Under comparable conditions a 2.5 per cent cresol solution kills *Bact. coli* in 1 minute, *staphylococci* in 6 minutes. Anthrax spores are killed in 3 hours by 5 per cent and in 2 hours by 10 per cent chloramin solutions. It is concluded that chloramin may very well serve as a substitute for calcium hypochlorite.

**Mixing Basin at Atlanta Water Works.** H. F. Wiedeman. *Engineering News Record*, vol. 98, No. 21, May 26, 1927, pp. 874-875. (Abstract by A. S. Bedell.)

Gradual increase in filter plant capacity resulted in increased difficulty in securing adequate mix with solution feed alum dosing and involved undesirable loss of head. The new mixing basin, with ultimate capacity of 60 m. g. d., is of the "around the end" type with 12 turns and total travel of 1,664 feet, and is divided into three sections with sluice gates to outlet flume for flexibility. At present, with 30 m. g. d. consumption, retention period is 40 minutes, and, on the average, the velocity is 0.5 foot per second. Dry-feed machines are operated by water motors. Floc forms before water has flowed one-fourth the distance and it is fully formed on leaving the basin, settling out quickly in coagulation basins. Thorough mixing has resulted in 25 per cent saving in chemicals used.

**Permissible Pollution in Streams Used for Public Water Supply.** J. K. Hoskins. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 55-64. (Abstract by J. K. Hoskins.)

The density of bacterial content is the most sensitive measure of sewage pollution and therefore the best criterion of the degree of permissible pollution of streams used as sources of public water supply. The relationships between contributing sewered population, rates of natural purification in the flowing stream, and efficiencies of artificial purification processes, if definitely established, afford a means for determining the permissible pollution of streams that may be used to produce safe drinking water supplies. A discussion of the paper included an explanation of the sewage disposal problem in North Carolina and the advisability of permitting fishing, under suitable regulations, on storage reservoirs.

**Water Purification.** Paul Hansen. *Journal of American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 83-95. (Abstract by J. B. Harrington.)

This article is a discussion of the progress and present limitations in the purification of water. It describes briefly the following, under separate headings: Standards of a filtration plant performance from 1900 to 1925, when the Treasury Standard was revised. In 1900 a bacteria reduction of 97 per cent was considered satisfactory. The percentage of reduction gradually increased to the present Treasury Standard of 1 *B. coli* per 100 c. c.

The limit of raw-water pollution is described in a brief summation of the research and experimental work done in 1922 by H. W. Streeter in his study of 25 water-purification plants and in 1923 by Streeter in his study of 10 filter plants along the Ohio River. These studies show that the plants with double coagulation and double sedimentation can satisfactorily purify waters containing 10,000 colon bacilli per 100 c. c., plants with single coagulation and sedimentation water containing 1,000 colon bacilli per 100 c. c., and plants with filtration alone water containing 100 colon bacilli per 100 c. c.

Further aids to control are given as hydrogen ion determination and the microscopic examination of sand grains in the filter bed. Improved methods of applying chemicals are also described briefly.

The design of the mixing chambers is stated as having been given considerable attention, with the result that various methods, such as the use of baffles, stirring devices, and hydraulic jumps, are now employed.

The design of a sedimentation basin is usually determined by the economy of shape and the ease of construction, with a minimum retention period of two hours. Other factors that should be given consideration are the time required for precipitation of chemicals under adverse conditions, the treatment of raw water by split or super chlorination, and the method of cleaning basins used for waters with high turbidities.

The design of filter units is essentially the same, with the exception of numerous changes in the underdrain system. Filter units of one-half million, one million, two million, and four million gallon capacity are most common. In the design of the clear well it is necessary to obtain an economical balance between filter capacity and clear-water storage. Aeration is described as being effective in removing carbon dioxide, hydrogen sulphide, iron, and tastes and odors. Disinfection by liquid chlorine and the advantages of super and split chlorination are discussed in connection with the reduction of phenol tastes and in combating micro-organisms.

The cause of deterioration of concrete is described as being due to the porosity of the walls exposed to water on one side and frost on the other. The disintegration usually takes place above the water-line. As a remedy the densest possible concrete should be used; also waterproofing compounds should be applied at and above the water line.

In closing, the question of sewage treatment to prevent too great a burden on water-purification plants is discussed; also, the elaboration of water-purification works, since municipalities usually fail to see the advantages of treating their sewage to protect water supplies below, unless forced by legal action.

**Review of Water Works Practice.** Anon. *Canadian Engineer*, vol. 52, No. 23, June 7, 1927, p. 570. (Abstract by R. E. Thompson.)

Brief outline of modern waterworks practice with regard to wells, pipe, services, water mains on both sides of street, treatment of water with iodine, and double chlorination. The article is based on a report presented at the annual meeting of the Kansas Engineering Society.

## DEATHS DURING WEEK ENDED OCTOBER 29, 1927

*Summary of information received by telegraph from industrial insurance companies for week ended October 29, 1927, and corresponding week of 1926. (From the Weekly Health Index, November 2, 1927, issued by the Bureau of the Census, Department of Commerce)*

	Week ended Oct. 29, 1927	Corresponding week 1926
Policies in force.....	69, 179, 971	65, 729, 006
Number of death claims.....	11, 869	11, 573
Death claims per 1,000 policies in force, annual rate.....	8. 9	9. 2

Deaths from all causes in certain large cities of the United States during the week ended October 29, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 2, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 29, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 29, 1927 <sup>1</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Oct. 29, 1927	Corresponding week 1926	
Total (68 cities).....	6,861	12.1	<sup>2</sup> 12.2	720	<sup>3</sup> 796	<sup>4</sup> 57
Akron.....	35	—	—	6	3	65
Albany <sup>5</sup> .....	22	9.6	18.0	1	6	21
Atlanta.....	71	—	—	2	9	—
White.....	35	—	—	1	3	—
Colored.....	36	( <sup>6</sup> )	—	1	6	—
Baltimore <sup>4</sup> .....	224	14.3	12.3	40	13	124
White.....	158	—	10.8	29	10	112
Colored.....	66	( <sup>6</sup> )	21.0	11	3	171
Birmingham.....	52	12.6	17.3	4	15	—
White.....	26	—	13.9	2	4	—
Colored.....	26	( <sup>6</sup> )	22.7	2	11	—
Boston.....	199	13.1	14.7	27	43	75
Bridgeport.....	21	—	—	1	6	19
Buffalo.....	141	13.4	14.2	15	7	63
Cambridge.....	22	9.3	10.7	2	2	36
Camden.....	33	12.9	8.4	2	3	34
Canton.....	25	11.5	10.4	2	3	47
Chicago <sup>4</sup> .....	702	11.8	10.9	68	57	59
Cincinnati.....	124	15.7	15.1	9	14	56
Cleveland.....	169	9.0	11.0	15	26	40
Columbus.....	74	13.3	14.6	4	9	37
Dallas.....	52	13.0	12.1	6	6	—
White.....	42	—	11.0	6	6	—
Colored.....	10	( <sup>6</sup> )	19.3	0	0	—
Dayton.....	29	8.4	12.7	3	10	49
Denver.....	74	13.3	14.1	11	9	—
Des Moines.....	33	11.5	9.3	2	5	33
Detroit.....	292	11.4	10.9	33	42	52
Duluth.....	28	12.7	8.3	6	2	129
El Paso.....	20	9.1	12.9	6	9	—
Erie.....	19	—	—	3	3	59
Fall River <sup>4</sup> .....	28	11.0	12.7	5	7	88
Flint.....	35	12.8	10.0	11	4	180
Fort Worth.....	27	8.6	5.2	3	3	—
White.....	24	—	5.2	3	3	—
Colored.....	3	( <sup>6</sup> )	5.5	0	0	—
Grand Rapids.....	22	7.2	11.7	4	7	59
Houston.....	55	—	—	11	6	—
White.....	36	—	—	8	3	—
Colored.....	19	( <sup>6</sup> )	—	3	3	—
Indianapolis.....	87	12.1	14.6	8	10	63
White.....	74	—	13.7	8	7	72
Colored.....	13	( <sup>6</sup> )	21.3	0	3	0
Jersey City.....	71	11.5	11.6	7	10	52
Kansas City, Kans.....	33	14.7	9.8	1	7	19
White.....	26	—	10.3	1	7	22
Colored.....	7	( <sup>6</sup> )	7.6	0	0	0
Kansas City, Mo.....	104	14.2	13.8	10	9	—
Knoxville.....	26	13.3	—	2	—	—
White.....	21	—	—	2	—	—
Colored.....	5	( <sup>6</sup> )	—	0	—	—
Los Angeles.....	223	—	—	6	32	17
Louisville.....	83	13.5	12.6	5	9	43
White.....	68	—	11.7	5	9	49
Colored.....	15	( <sup>6</sup> )	17.6	0	0	0
Lowell.....	23	10.9	14.2	2	4	39
Lynn.....	19	9.4	7.0	0	2	0
Memphis.....	60	17.5	18.6	5	11	—
White.....	31	—	11.9	4	1	—
Colored.....	29	( <sup>6</sup> )	30.6	1	10	—
Milwaukee.....	103	10.1	8.8	13	11	61
Minneapolis.....	111	13.1	9.9	11	4	62
Nashville.....	59	22.3	18.6	8	7	—
White.....	32	—	17.0	2	6	—
Colored.....	27	( <sup>6</sup> )	22.7	6	1	—
New Bedford.....	20	8.7	8.7	3	4	52
New Haven.....	43	12.1	11.7	6	5	84

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended October 29, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 2, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued.

City	Week ended Oct. 29, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 29, 1927
	Total deaths	Death rate		Week ended Oct. 29, 1927	Corresponding week 1926	
New Orleans	143	17.5	17.8	19	16	-----
White	91	-----	14.1	14	10	-----
Colored	51	( <sup>1</sup> )	28.2	5	6	-----
New York	1,304	11.4	11.4	112	157	46
Bronx borough	160	9.0	9.7	15	14	43
Brooklyn borough	435	10.0	10.3	44	61	46
Manhattan borough	538	15.5	14.9	40	64	47
Queens borough	120	8.3	6.7	12	12	51
Richmond borough	42	14.0	17.5	1	6	19
Newark, N. J.	89	10.0	9.4	9	14	45
Oakland	49	9.6	11.8	6	3	70
Oklahoma City	27	-----	-----	2	4	-----
Omaha	42	10.0	12.8	4	4	22
Paterson	32	11.6	9.1	1	0	18
Philadelphia	435	11.1	12.9	48	62	64
Pittsburgh	191	13.5	12.8	25	19	87
Portland, Oreg.	58	-----	-----	6	4	63
Providence	77	14.3	12.9	11	9	93
Richmond	55	14.9	11.9	2	12	26
White	33	-----	7.4	1	7	20
Colored	22	( <sup>1</sup> )	22.8	1	5	38
Rochester	69	11.1	11.0	11	5	93
St. Louis	255	15.8	13.8	25	22	-----
St. Paul	55	11.5	12.2	6	4	55
Salt Lake City <sup>2</sup>	30	11.5	15.7	1	5	15
San Antonio	66	10.3	11.4	14	9	-----
San Diego	39	17.7	22.8	4	2	85
San Francisco	156	14.1	14.7	5	9	31
Schenectady	20	11.2	11.8	3	0	90
Seattle	63	-----	-----	6	5	63
Somerville	13	6.6	13.0	0	1	0
Spokane	20	9.6	12.4	2	0	50
Springfield, Mass.	32	11.4	13.7	0	4	0
Syracuse	39	10.3	13.8	7	6	90
Tacoma	21	10.2	11.3	1	1	24
Toledo	56	9.6	12.9	3	11	29
Trenton	30	11.4	11.7	7	3	122
Utica	34	17.2	19.2	8	1	182
Washington, D. C.	128	12.4	13.3	15	10	87
White	77	-----	10.2	6	5	51
Colored	51	( <sup>1</sup> )	22.6	9	5	165
Waterbury	15	-----	-----	2	1	47
Wilmington, Del.	25	10.3	12.6	2	2	50
Worcester	36	9.6	11.6	3	6	36
Yonkers	22	9.6	12.6	1	1	23
Youngstown	30	9.3	8.2	7	3	98

<sup>1</sup> Annual rate per 1,000 population.

<sup>2</sup> Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

<sup>3</sup> Data for 67 cities.

<sup>4</sup> Data for 63 cities.

<sup>5</sup> Deaths for week ended Friday Oct. 28, 1927.

<sup>6</sup> In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.



## PREVALENCE OF DISEASE

*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring*

**UNITED STATES**

## CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

### Reports for Week Ended November 5, 1927

DIPHTHERIA	Cases	DIPHTHERIA—continued	Cases
Alabama.....	114	Texas.....	68
Arizona.....	9	Utah <sup>1</sup> .....	13
Arkansas.....	42	Washington <sup>2</sup> .....	30
California.....	123	West Virginia.....	19
Colorado.....	36	Wisconsin.....	38
Connecticut.....	21	Wyoming.....	6
Delaware.....	3		
Florida.....	36	INFLUENZA	
Georgia.....	53	Alabama.....	38
Illinois.....	182	Arkansas.....	42
Indiana.....	69	California.....	18
Iowa <sup>1</sup> .....	26	Florida.....	4
Kansas.....	46	Georgia.....	57
Louisiana.....	71	Illinois.....	29
Maine.....	2	Indiana.....	6
Maryland <sup>1</sup> .....	33	Maryland <sup>1</sup> .....	20
Massachusetts.....	101	Massachusetts.....	13
Michigan.....	133	Michigan.....	3
Minnesota.....	88	Minnesota.....	2
Mississippi.....	84	Missouri.....	12
Missouri.....	113	New Jersey.....	11
Montana.....	8	New York.....	9
Nebraska.....	19	Oklahoma <sup>2</sup> .....	4
New Jersey.....	150	Oregon.....	11
New Mexico.....	12	Rhode Island.....	4
New York.....	337	South Carolina.....	430
North Carolina.....	225	South Dakota.....	2
Oklahoma <sup>2</sup> .....	120	Tennessee.....	38
Oregon.....	32	Texas.....	62
Pennsylvania.....	307	Utah <sup>1</sup> .....	3
Rhode Island.....	16	Washington.....	1
South Carolina.....	89	West Virginia.....	3
South Dakota.....	8	Wisconsin.....	20
Tennessee.....	67	Wyoming.....	

<sup>1</sup> Week ended Friday.

<sup>2</sup> Exclusive of Oklahoma City and Tulsa.

	MEASLES	Cases
Alabama.....	.....	8
Arizona.....	.....	1
Arkansas.....	.....	8
California.....	.....	40
Colorado.....	.....	8
Connecticut.....	.....	9
Delaware.....	.....	12
Georgia.....	.....	8
Idaho.....	.....	1
Illinois.....	.....	32
Indiana.....	.....	11
Iowa <sup>1</sup> .....	.....	2
Kansas.....	.....	37
Louisiana.....	.....	11
Maine.....	.....	147
Maryland <sup>1</sup> .....	.....	28
Massachusetts.....	.....	167
Michigan.....	.....	33
Minnesota.....	.....	5
Montana.....	.....	2
Nebraska.....	.....	8
New Jersey.....	.....	25
New Mexico.....	.....	28
New York.....	.....	140
North Carolina.....	.....	490
Oklahoma <sup>1</sup> .....	.....	10
Oregon.....	.....	21
Pennsylvania.....	.....	379
South Carolina.....	.....	187
South Dakota.....	.....	7
Tennessee.....	.....	42
Texas.....	.....	4
Utah <sup>1</sup> .....	.....	1
Washington.....	.....	88
West Virginia.....	.....	17
Wisconsin.....	.....	37
Wyoming.....	.....	17

**MENINGOCOCCUS MENINGITIS**

Alabama.....	1
California.....	6
Colorado.....	5
Florida.....	1
Idaho.....	4
Illinois.....	8
Iowa <sup>1</sup> .....	1
Massachusetts.....	2
Michigan.....	3
Mississippi.....	1
New Jersey.....	1
Oklahoma <sup>2</sup> .....	2
Oregon.....	1
Pennsylvania.....	3
Tennessee.....	1
Texas.....	1
Washington.....	2
Wisconsin.....	1

## POLIOMYELITIS

Arkansas.....	1
California.....	35
Colorado.....	7
Connecticut.....	7

<sup>1</sup> Week ended Friday.

POLIOMYELITIS—continued	Cases
Delaware.....	1
Florida.....	1
Idaho.....	8
Illinois.....	14
Indiana.....	11
Iowa <sup>1</sup> .....	3
Kansas.....	4
Maine.....	5
Maryland <sup>1</sup> .....	1
Massachusetts.....	56
Michigan.....	14
Minnesota.....	1
Mississippi.....	3
Missouri.....	7
Montana.....	1
Nebraska.....	10
New Jersey.....	9
New Mexico.....	2
New York.....	23
North Carolina.....	2
Oklahoma <sup>2</sup> .....	3
Oregon.....	20
Pennsylvania.....	18
Rhode Island.....	3
South Carolina.....	4
South Dakota.....	7
Tennessee.....	4
Texas.....	11
Utah <sup>1</sup> .....	2
Washington.....	26
West Virginia.....	12
Wisconsin.....	1

## SCARLET FEVER

Alabama.....	43
Arizona.....	5
Arkansas.....	23
California.....	134
Colorado.....	93
Connecticut.....	45
Delaware.....	3
Florida.....	14
Georgia.....	33
Idaho.....	8
Illinois.....	203
Indiana.....	128
Iowa <sup>1</sup> .....	50
Kansas.....	102
Louisiana.....	17
Maine.....	34
Maryland <sup>1</sup> .....	39
Massachusetts.....	213
Michigan.....	187
Minnesota.....	128
Mississippi.....	30
Missouri.....	84
Montana.....	19
Nebraska.....	34
New Jersey.....	106
New Mexico.....	20
New York.....	256
North Carolina.....	173
Oklahoma <sup>1</sup> .....	44
Oregon.....	36

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.

## SCARLET FEVER—continued

	Cases
Pennsylvania.....	342
Rhode Island.....	15
South Carolina.....	32
South Dakota.....	37
Tennessee.....	45
Texas.....	79
Utah <sup>1</sup> .....	3
Washington.....	68
West Virginia.....	103
Wisconsin.....	121
Wyoming.....	17

## SMALLPOX

Alabama.....	8
California.....	7
Colorado.....	4
Idaho.....	3
Illinois.....	13
Indiana.....	38
Iowa <sup>1</sup> .....	41
Kansas.....	27
Louisiana.....	5
Michigan.....	18
Minnesota.....	1
Mississippi.....	12
Missouri.....	82
Montana.....	30
Nebraska.....	11
New York.....	7
North Carolina.....	15
Oklahoma <sup>2</sup> .....	20
Oregon.....	18
South Carolina.....	16
South Dakota.....	3
Tennessee.....	5
Texas.....	5
Utah <sup>1</sup> .....	47
Washington.....	17
West Virginia.....	8
Wisconsin.....	28

## TYPHOID FEVER

	Cases
Alabama.....	26
Arizona.....	2
Arkansas.....	20
California.....	9
Colorado.....	5
Connecticut.....	6
Delaware.....	2
Florida.....	3
Georgia.....	25
Illinois.....	38
Indiana.....	10
Iowa <sup>1</sup> .....	3
Kansas.....	3
Louisiana.....	18
Maine.....	3
Maryland <sup>1</sup> .....	22
Massachusetts.....	8
Michigan.....	13
Minnesota.....	6
Mississippi.....	8
Missouri.....	26
Montana.....	3
Nebraska.....	4
New Jersey.....	10
New Mexico.....	13
New York.....	55
North Carolina.....	24
Oklahoma <sup>2</sup> .....	54
Oregon.....	8
Pennsylvania.....	42
South Carolina.....	31
South Dakota.....	8
Tennessee.....	48
Texas.....	10
Utah <sup>1</sup> .....	3
Washington.....	5
West Virginia.....	50
Wisconsin.....	7
Wyoming.....	5

## Reports for Week Ended October 29, 1927

## DIPHTHERIA

	Cases
District of Columbia.....	25
Georgia.....	50

## INFLUENZA

Georgia.....	51
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## MEASLES

District of Columbia.....	3
Georgia.....	6

<sup>1</sup> Week ended Friday.

## POLIOMYELITIS

	Cases
District of Columbia.....	1

## SCARLET FEVER

District of Columbia.....	16
Georgia.....	44

## TYPHOID FEVER

Georgia.....	31
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<sup>2</sup> Exclusive of Oklahoma City and Tulsa.

## SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Men- ingo- coccus menin- gitis	Diph- theria	Influ- enza	Mala- ria	Mea- sles	Pella- gra	Pollo- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>September, 1927</i>										
California.....	14	339	32	13	135	3	254	205	33	79
Idaho.....	0	6	-----	-----	4	-----	1	19	23	10
Kansas.....	3	152	3	2	91	2	62	201	10	104
Oklahoma <sup>1</sup> .....	6	274	68	1, 121	54	46	33	87	55	385
Virginia.....	3	194	719	195	71	28	10	220	1	195

<sup>1</sup> Exclusive of Oklahoma City and Tulsa.

<i>September, 1927</i>		<i>September, 1927</i>	
Chicken pox:	Cases	Mumps—Continued.	Cases
California.....	218	Kansas.....	22
Idaho.....	4	Oklahoma.....	8
Kansas.....	53	Ophthalmia neonatorum:	
Oklahoma.....	7	California.....	3
Virginia.....	77	Oklahoma.....	1
Dysentery:		Paratyphoid fever:	
California—		California.....	4
Amoebic.....	5	Rabies in animals:	
Bacillary.....	3	California.....	24
Kansas (bacillary).....	2	Idaho.....	1
Oklahoma.....	41	Scabies:	
Virginia.....	223	Kansas.....	1
German measles:		Septic sore throat:	
California.....	54	Idaho.....	1
Kansas.....	1	Oklahoma.....	9
Hookworm disease:		Tetanus:	
California.....	2	California.....	6
Virginia.....	17	Kansas.....	3
Impetigo contagiosa:		Oklahoma.....	1
Kansas.....	13	Trachoma:	
Jaundice (epidemic):		California.....	8
California.....	3	Oklahoma.....	7
Leprosy:		Vincent's angina:	
California.....	1	Kansas.....	4
Lethargic encephalitis:		Whooping cough:	
California.....	8	California.....	435
Idaho.....	1	Idaho.....	14
Kansas.....	1	Kansas.....	205
Mumps:		Oklahoma.....	80
California.....	200	Virginia.....	320
Idaho.....	18		

**Number of Cases of Certain Communicable Diseases Reported for the Month of August, 1927, by State Health Officers**

State	Chicken pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Typhoid fever	Whoop- ing cough
Alabama.....	7	105	138	25	71	10	396	356	114
Arizona.....		4	10	1	10	0	54	18	1
Arkansas.....	36	13	50	168	9	11	1 68	192	104
California.....	207	387	239	137	243	29	962	93	679
Colorado.....	16	67	23	13	67	2	218	38	87
Connecticut.....	50	82	42	24	38	0	108	13	191
Delaware.....	5	2	7	1	3	0	6	16	3
District of Columbia.....	8	30	1		17	3	98	18	20
Florida.....	8	49	28	15	13	13	94	63	15
Georgia.....	4	84	21	16	55	7	42	330	48
Idaho.....	7	7	17	25	16	25	1 2	4	56
Illinois.....	188	325	128	212	314	31	1,167	223	1,218
Indiana.....	15	74	24	9	104	94	147	70	121
Iowa.....	12	42	16	9	45	37	51	29	64
Kansas.....	24	36	81	19	139	9	222	99	246
Kentucky <sup>2</sup> .....									
Louisiana.....	3	77	13	1	28	3	1 151	167	25
Maine.....	16	31	13	17	56	0	21	30	48
Maryland.....	18	108	40	17	46	0	295	209	218
Massachusetts.....	72	216	253	145	349	0	522	69	365
Michigan.....	147	212	104	99	296	59	447	87	673
Minnesota.....	54	119	32		195	0	1 219	32	53
Mississippi.....	310	105	471	165	47	7	312	280	870
Missouri.....	10	87	38	47	93	22	187	104	183
Montana.....	9	21	10	1	169	1	40	44	20
Nebraska.....	12	15	60	27	53	15	21	22	38
Nevada <sup>3</sup> .....									
New Hampshire.....		3			15	0		1	
New Jersey.....	65	274	36		133	0	396	53	554
New Mexico <sup>4</sup> .....									
New York.....	322	680	380	389	382	11	1,579	188	1,210
North Carolina.....	30	232	705		108	34		313	915
North Dakota.....	2	15	19	4	65	13	5	3	30
Ohio.....	114	323	51	147	299	21	683	168	529
Oklahoma <sup>5</sup> .....	8	79	114	8	29	48	73	410	34
Oregon.....	26	23	45	18	28	37	50	21	48
Pennsylvania.....	210	447	247	203	343	1	722	214	730
Rhode Island.....	4	34	5	9	37	0		19	21
South Carolina.....	33	221	218		51	38	147	427	267
South Dakota.....	3	13	26	4	28	31	6	7	58
Tennessee.....	6	69	49	14	71	25	143	633	69
Texas <sup>2</sup> .....									
Utah <sup>2</sup> .....									
Vermont.....	13	12	58	45		0	1 17	2	31
Virginia.....	43	134	48		91	16	1 164	301	558
Washington.....	77	71	184	50	55	25	145	35	126
West Virginia.....	3	53	31		109	47	51	157	79
Wisconsin.....	78	80	293	104	199	35	110	40	450
Wyoming.....	5	1	11	4	10	0	1	3	21

<sup>1</sup> Pulmonary.<sup>2</sup> Reports received weekly.<sup>3</sup> Reports received annually.<sup>4</sup> Report not received at time of going to press.<sup>5</sup> Exclusive of Oklahoma City and Tulsa.



## Case Rates per 1,000 Population (Annual Basis) for the Month of August, 1927

State	Chicken pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Typhoid fever	Whoop- ing cough
Alabama.....	0.03	0.48	0.64	0.12	0.33	0.05	1.83	1.64	0.53
Arizona.....		.10	.26	.03	.26	.00	1.39	.46	.03
Arkansas.....	.22	.08	.31	1.03	.06	.07	1.42	1.18	.64
California.....	.55	1.03	.63	.36	.65	.08	2.56	.25	1.80
Colorado.....	.18	.73	.25	.14	.73	.02	2.39	.42	.95
Connecticut.....	.36	.69	.30	.17	.27	.00	.78	.09	1.37
Delaware.....	.24	.10	.34	.05	.15	.00	.29	.78	.15
District of Columbia.....	.17	.85	.02		.37	.07	2.14	.39	.44
Florida.....	.07	.42	.24	.13	.11	.11	.81	.54	.13
Georgia.....	.01	.31	.08	.06	.20	.03	.16	1.23	.18
Idaho.....	.15	.15	.37	.57	.35	.55	1.04	.09	1.23
Illinois.....	.30	.52	.21	.34	.51	.05	1.88	.36	1.97
Indiana.....	.06	.28	.09	.03	.39	.35	.55	.26	.45
Iowa.....	.06	.20	.08	.04	.22	.18	.25	.14	.31
Kansas.....	.15	.23	.52	.12	.90	.06	1.43	.64	1.58
Kentucky <sup>2</sup> .....									
Louisiana.....	.02	.47	.03	.01	.17	.02	1.92	1.02	.15
Maine.....	.24	.46	.19	.25	.83	.00	.31	.45	.71
Maryland.....	.13	.80	.29	.13	.34	.00	2.18	1.54	1.61
Massachusetts.....	.20	.60	.70	.40	.97	.00	1.45	.19	1.01
Michigan.....	.39	.56	.27	.26	.78	.15	1.17	.23	1.76
Minnesota.....	.24	.52	.14		.85	.00	1.96	.14	.23
Mississippi.....	2.04	.69	3.10	1.08	.31	.05	2.03	1.84	5.72
Missouri.....	.03	.29	.13	.16	.31	.07	.63	.35	.1
Montana.....	.15	.35	.16	.02	2.62	.02	.66	.73	.33
Nebraska.....	.10	.13	.56	.23	.45	.13	.18	.19	.32
Nevada <sup>1</sup> .....									
New Hampshire.....		.08			.39	.00		.03	
New Jersey.....	.20	.86	.11		.42	.00	1.24	.17	1.74
New Mexico <sup>1</sup> .....									
New York.....	.33	.70	.39	.40	.39	.01	1.63	.19	1.25
North Carolina.....	.12	.04	2.87		.44	.14		1.27	3.72
North Dakota.....	.04	.28	.33	.07	1.19	.24	.09	.06	.55
Ohio.....	.20	.57	.09	.26	.52	.04	1.20	.29	.93
Oklahoma <sup>1</sup> .....	.04	.44	.63	.04	.16	.27	.40	2.27	.19
Oregon.....	.34	.30	.60	.24	.37	.49	.66	.28	.63
Pennsylvania.....	.25	.54	.30	.25	.42	.00	.87	.26	.88
Rhode Island.....	.07	.57	.08	.15	.62	.00		.32	.35
South Carolina.....	.21	1.41	1.39		.33	.24	.94	2.73	1.70
South Dakota.....	.05	.22	.44	.07	.47	.52	.10	.12	.98
Tennessee.....	.03	.33	.23	.07	.34	.12	.68	3.00	.33
Texas <sup>1</sup> .....									
Utah <sup>1</sup> .....									
Vermont.....	.43	.40	1.94	1.50		.00	1.57	.07	1.04
Virginia.....	.20	.62	.22		.42	.07	1.76	1.39	2.58
Washington.....	.58	.54	1.16	.38	.41	.19	1.09	.26	.95
West Virginia.....	.02	.37	.22		.76	.33	.35	1.09	.55
Wisconsin.....	.31	.32	1.18	.42	.80	.14	.48	.16	1.82
Wyoming.....	.24	.05	.54	.20	.49	.00	.05	.15	1.03

<sup>1</sup> Pulmonary.<sup>2</sup> Reports received weekly.<sup>3</sup> Reports received annually.<sup>4</sup> Report not received at time of going to press.<sup>5</sup> Exclusive of Oklahoma City and Tulsa.

## GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,860,000. The estimated population of the 94 cities reporting deaths is more than 30,190,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 22, 1927, and October 23, 1926

	1927	1926	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
41 States.....	2,558	2,402	-----
100 cities.....	994	1,178	1,111
Measles:			
41 States.....	1,395	2,111	-----
100 cities.....	324	288	-----
Poliomyelitis:			
41 States.....	493	81	-----
Scarlet fever:			
41 States.....	2,212	2,432	-----
100 cities.....	691	885	729
Smallpox:			
41 States.....	173	217	-----
100 cities.....	42	18	26
Typhoid fever:			
41 States.....	786	1,126	-----
100 cities.....	118	148	134
<i>Deaths reported</i>			
Influenza and pneumonia:			
94 cities.....	497	524	-----
Smallpox:			
94 cities.....	0	0	-----

## City reports for week ended October 22, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland.....	75,333	14	2	1	0	0	0	0	1
New Hampshire:									
Concord.....	22,546	0	0	0	0	0	0	0	1
Vermont:									
Barre.....	10,008	0	0	0	0	0	0	0	0
Massachusetts:									
Boston.....	779,620	23	43	16	3	1	78	3	18
Fall River.....	128,993	0	4	4	0	0	1	0	1
Springfield.....	142,035	4	3	6	1	1	1	2	1
Worcester.....	190,757	11	5	4	0	0	0	7	2
Rhode Island:									
Pawtucket.....	69,760	0	1	1	0	0	0	0	1
Providence.....	267,918	0	6	5	0	0	1	1	4
Connecticut:									
Bridgeport.....	( <sup>1</sup> )	0	9	7	0	0	0	1	1
Hartford.....	160,197	3	5	9	0	0	0	0	5
New Haven.....	178,927	7	1	0	0	0	1	2	2

<sup>1</sup> No estimate made.

## City reports for week ended October 22, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, es- timated ex- pectancy	Cases re- ported	Cases re- ported	Deaths re- ported			
MIDDLE ATLANTIC									
New York:									
Buffalo.....	538, 016	13	16	20	-----	0	1	1	7
New York.....	5, 873, 356	24	123	145	6	4	27	15	74
Rochester.....	316, 786	3	11	1	-----	1	0	1	5
Syracuse.....	182, 003	4	8	1	-----	0	8	2	6
New Jersey:									
Camden.....	128, 642	5	8	10	0	0	0	0	0
Newark.....	452, 513	1	10	17	5	0	0	12	4
Trenton.....	132, 020	0	4	0	0	0	1	0	1
Pennsylvania:									
Philadelphia.....	1, 979, 364	29	63	40	-----	6	0	18	26
Pittsburgh.....	631, 563	12	26	52	-----	3	92	10	25
Reading.....	112, 707	5	3	3	-----	0	1	1	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	409, 333	2	13	6	0	1	0	0	11
Cleveland.....	936, 485	9	49	77	2	0	2	19	8
Columbus.....	279, 836	5	9	13	0	0	0	1	1
Toledo.....	287, 380	10	14	6	4	4	15	0	2
Indiana:									
Fort Wayne.....	97, 846	-----	4	-----	-----	-----	-----	-----	-----
Indianapolis.....	358, 819	3	14	16	0	0	4	5	3
South Bend.....	80, 091	1	3	0	0	0	0	0	1
Terre Haute.....	71, 071	0	2	4	0	0	0	0	1
Illinois:									
Chicago.....	2, 995, 239	25	96	84	8	5	4	13	42
Springfield.....	63, 923	0	3	0	0	0	2	10	2
Michigan:									
Detroit.....	1, 245, 824	12	72	65	2	1	9	23	16
Flint.....	130, 316	9	13	7	0	0	1	10	5
Grand Rapids.....	153, 698	7	6	0	1	1	6	1	2
Wisconsin:									
Kenosha.....	50, 891	1	2	1	1	0	0	7	0
Madison.....	46, 385	0	0	0	0	0	0	0	3
Milwaukee.....	509, 192	21	24	7	0	0	3	9	4
Racine.....	67, 707	2	2	2	0	0	1	0	1
Superior.....	39, 671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	110, 502	5	3	0	0	0	0	0	1
Minneapolis.....	425, 435	17	32	12	0	2	1	0	7
St. Paul.....	246, 001	19	20	5	0	1	1	3	10
Iowa:									
Davenport.....	52, 469	0	2	0	0	-----	0	0	-----
Sioux City.....	76, 411	5	3	0	0	-----	0	1	-----
Waterloo.....	36, 771	9	0	0	0	-----	3	0	-----
Missouri:									
Kansas City.....	367, 481	8	12	4	0	3	2	7	9
St. Joseph.....	78, 342	5	3	0	1	0	0	1	1
St. Louis.....	821, 543	3	50	36	0	0	2	6	-----
North Dakota:									
Fargo.....	26, 403	8	1	0	0	0	0	0	0
Grand Forks.....	14, 811	6	0	0	0	-----	0	0	-----
South Dakota:									
Aberdeen.....	15, 036	0	0	0	0	-----	1	0	-----
Sioux Falls.....	30, 127	0	0	0	0	-----	1	0	-----
Nebraska:									
Lincoln.....	60, 941	14	2	0	0	0	0	11	0
Omaha.....	211, 768	4	12	2	0	0	1	1	3
Kansas:									
Topeka.....	55, 411	0	2	4	0	0	0	0	0
Wichita.....	88, 367	5	4	2	0	0	1	0	0

## City reports for week ended October 22, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, esti- mated expect- ancy	Cases re- ported	Cases re- ported	Deaths re- ported			
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	122,049	0	3	1	0	0	0	0	
Maryland:									
Baltimore.....	796,296	16	28	22	5	1	3	5	13
Cumberland.....	33,741	0	0	0	0	0	0	0	0
Frederick.....	12,035	0	1	0	0	0	0	0	
District of Columbia:									
Washington.....	497,906	2	16	22	0	0	0	0	13
Virginia:									
Lynchburg.....	30,393	1	3	8	0	0	0	0	
Norfolk.....	(1)	4	4	5	0	0	0	0	2
Richmond.....	186,403	0	25	18	0	2	3	0	0
Roanoke.....	58,208	0	7	4	0	0	6	1	0
West Virginia:									
Charleston.....	49,019	0	3	1	2	1	0	0	0
Wheeling.....	56,208	3	3	0	0	0	1	0	
North Carolina:									
Raleigh.....	30,371	0	4	1	0	0	0	0	1
Wilmington.....	37,061	0	1	0	0	0	6	0	3
Winston-Salem.....	69,031	0	5	3	0	0	1	0	0
South Carolina:									
Charleston.....	73,125	0	1	1	19	0	3	0	2
Columbia.....	41,225	0	3	1	0	0	2	1	0
Greenville.....	27,311	0	2	2	0	0	0	1	0
Georgia:									
Atlanta.....	(1)	1	11	11	15	2	0	1	0
Brunswick.....	16,809	0	0	0	0	0	0	4	0
Savannah.....	93,134	0	3	4	9	0	0	0	1
Florida:									
Miami.....	69,754	0	0	3	0	0	0	2	0
St. Petersburg.....	26,847	0	0	0	0	0	0	0	0
Tampa.....	94,743	0	2	3	1	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington.....	58,309	0	3	1	0	0	0	0	0
Lexington.....	46,895	0	0	0	0	0	0	0	0
Louisville.....	305,935	1	11	0	1	0	0	1	0
Tennessee:									
Memphis.....	174,533	0	11	6	0	1	10	0	7
Nashville.....	136,220	1	6	1	0	2	0	2	5
Alabama:									
Birmingham.....	205,670	0	7	22	3	2	0	1	6
Mobile.....	65,955	0	2	2	0	0	0	0	3
Montgomery.....	46,481	0	3	1	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith.....	31,643	0	2	0	0	0	0	0	0
Little Rock.....	74,216	0	2	5	0	0	1	0	3
Louisiana:									
New Orleans.....	414,493	0	10	11	3	3	0	0	7
Shreveport.....	57,857	0	1	2	0	0	0	0	1
Oklahoma:									
Tulsa.....	124,478	1	0	6	0	0	2	0	0
Texas:									
Dallas.....	194,450	0	13	26	0	0	0	0	4
Galveston.....	48,375	0	0	0	0	0	0	0	0
Houston.....	164,954	0	4	7	0	0	1	2	3
San Antonio.....	198,069	0	2	13	0	0	7	0	2
MOUNTAIN									
Montana:									
Billings.....	17,971	1	0	0	0	0	0	0	0
Great Falls.....	29,883	0	1	0	0	0	1	1	1
Helena.....	12,037	2	0	0	0	0	0	0	0
Missoula.....	12,668	5	0	1	0	0	0	0	0

<sup>1</sup> No estimate made.

## City reports for week ended October 22, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chick- on pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, es- ti- mated ex- pec- tancy	Cases re- ported	Cases re- ported	Deaths re- ported			
MOUNTAIN—continued									
Idaho:									
Boise.....	23,042	0	0	0	0	0	0	1	0
Colorado:									
Denver.....	280,911	37	16	7	7	2	4	4	7
Pueblo.....	43,787	1	4	1	0	0	0	0	2
New Mexico:									
Albuquerque.....	21,000	0	2	0	0	0	1	0	0
Utah:									
Salt Lake City.....	130,948	13	4	8	0	0	3	3	6
Nevada:									
Reno.....	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle.....	(1)	25	8	5	0	-----	10	6	-----
Spokane.....	103,897	13	4	0	0	-----	1	0	-----
Tacoma.....	104,455	3	4	3	0	0	0	1	0
Oregon:									
Portland.....	282,383	10	11	5	1	0	1	1	0
California:									
Los Angeles.....	(1)	11	40	57	7	0	1	3	24
Sacramento.....	72,260	5	2	2	0	0	1	0	2
San Francisco.....	557,530	35	18	17	2	4	6	9	3

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re-ported	Typhoid fever			Whoop- ing cough, cases re-ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland.....	1	2	0	0	0	1	1	0	0	4	19
New Hampshire:											
Concord.....	0	0	0	0	0	1	0	0	0	0	9
Vermont:											
Barre.....	1	0	0	0	0	0	0	0	0	0	1
Massachusetts:											
Boston.....	31	26	0	0	0	8	3	3	1	27	-----
Fall River.....	2	4	0	0	0	2	1	0	0	0	23
Springfield.....	5	0	0	0	0	1	0	0	0	1	30
Worcester.....	8	5	0	0	0	4	0	1	0	2	36
Rhode Island:											
Pawtucket.....	0	1	0	0	0	0	0	0	0	0	18
Providence.....	4	15	0	0	0	1	0	0	0	0	49
Connecticut:											
Bridgeport.....	4	6	0	0	0	1	0	0	0	0	24
Hartford.....	4	1	0	0	0	0	0	0	1	1	38
New Haven.....	5	5	0	0	0	0	1	3	0	5	42
MIDDLE ATLANTIC											
New York:											
Buffalo.....	14	25	0	0	0	10	2	3	0	6	119
New York.....	62	41	0	0	0	81	25	18	0	115	1,127
Rochester.....	5	8	0	0	0	3	1	0	0	6	64
Syracuse.....	6	2	0	0	0	1	1	1	0	4	53
New Jersey:											
Camden.....	3	0	0	0	0	2	1	0	0	0	33
Newark.....	8	7	0	0	0	10	2	2	1	24	91
Trenton.....	1	0	0	0	0	5	1	1	0	1	32
Pennsylvania:											
Philadelphia.....	46	39	0	0	0	23	9	5	1	15	443
Pittsburgh.....	31	24	0	0	0	13	2	0	1	15	178
Reading.....	1	3	0	0	0	0	1	0	0	2	23

<sup>1</sup> No estimate made.<sup>2</sup> Pulmonary tuberculosis only.



## City reports for week ended October 22, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	10	3	0	0	0	13	1	1	0	2	130
Cleveland.....	23	20	1	0	0	10	3	2	0	9	162
Columbus.....	8	12	0	0	0	5	1	1	0	3	62
Toledo.....	9	11	0	0	0	2	2	1	1	3	63
Indiana:											
Fort Wayne.....	1		0				1				
Indianapolis.....	7	13	1	0	0	3	1	3	0	4	100
South Bend.....	2	1	0	0	0	0	0	0	0	0	13
Terre Haute.....	2	1	0	0	0	1	0	0	0	0	17
Illinois:											
Chicago.....	72	47	0	0	0	43	6	13	0	87	717
Springfield.....	2	5	0	0	0	2	1	2	0	3	19
Michigan:											
Detroit.....	56	38	1	0	0	24	5	0	0	48	246
Flint.....	8	21	0	0	0	1	1	1	0	3	37
Grand Rapids.....	7	5	1	0	0	1	0	0	0	3	35
Wisconsin:											
Kenosha.....	2	1	0	0	0	0	0	0	0	1	4
Madison.....	1	6	0	0	0	1	0	0	0	0	15
Milwaukee.....	18	13	2	0	0	7	1	0	0	17	87
Racine.....	4	3	1	0	0	1	0	0	0	7	10
Superior.....	2	5	0	0	0	1	0	1	0	0	10
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	6	2	0	0	0	1	0	0	0	3	25
Minneapolis.....	36	17	2	0	0	4	2	0	0	2	97
St. Paul.....	16	2	2	0	0	2	1	1	1	2	42
Iowa:											
Davenport.....	1	2	0	0			0	0		0	
Sioux City.....	2	3	1	0			0	0		2	
Waterloo.....	2	1	0	0			1	0		0	
Missouri:											
Kansas City.....	9	14	0	1	0	4	2	1	2	6	94
St. Joseph.....	4	0	0	0	0	1	1	0	1	0	22
St. Louis.....	29	13	0	0	0	5	5	6	0	12	208
North Dakota:											
Fargo.....	2	2	0	0	0	0	0	0	0	0	4
Grand Forks.....	0	0	0	0			0	1		0	
South Dakota:											
Aberdeen.....	2	3	0	0			1	0		0	
Sioux Falls.....	1	3	1	0			0	0		0	6
Nebraska:											
Lincoln.....	2	2	0	0	0	0	0	0	0	1	19
Omaha.....	4	7	1	0	0	2	0	0	0	0	51
Kansas:											
Topeka.....	3	3	0	0	0	0	0	2	1	10	16
Wichita.....	3	5	0	0	0	0	0	1	0	0	18
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	3	3	0	0	0	1	1	1	0	0	23
Maryland:											
Baltimore.....	11	11	0	0	0	10	8	4	1	15	203
Cumberland.....	0	4	0	0	0	0	1	0	0	0	10
Frederick.....	0	0	0	0	0	1	0	1	0	0	5
District of Col.:											
Washington.....	12	17	0	0	0	14	3	3	0	1	113
Virginia:											
Lynchburg.....	2	3	0	0	0	1	0	0	0	2	17
Norfolk.....	1	3	0	0	0	4	1	0	0	5	
Richmond.....	8	1	0	0	0	1	1	0	0	0	51
Roanoke.....	3	6	0	0	0	0	1	1	0	0	6
West Virginia:											
Charleston.....	1	7	0	0	0	1	1	1	0	0	17
Wheeling.....	4	0	0	0	0	0	1	0	0	0	21
North Carolina:											
Raleigh.....	3	0	0	0	0	2	0	0	0	0	12
Wilmington.....	1	0	0	0	0	0	0	1	0	0	15
Winston-Salem.....	2	16	0	0	0	1	0	1	0	2	34

## City reports for week ended October 22, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
SOUTH ATLANTIC— continued											
South Carolina:											
Charleston.....	1	1	0	0	0	2	0	2	0	0	27
Columbia.....	0	0	0	0	0	0	0	0	0	1	8
Greenville.....	0	2	0	0	0	0	1	0	0	3	3
Georgia:											
Atlanta.....	7	13	1	0	0	6	1	3	1	1	64
Brunswick.....	0	0	0	0	0	0	0	0	0	0	4
Savannah.....	1	2	0	4	0	5	1	0	0	0	37
Florida:											
Miami.....		0	0	0	0	1		0	0	0	15
St. Petersburg.....	0		0		0	1	0		0		12
Tampa.....	0	0	0	0	0	1	0	0	0	5	18
EAST SOUTH CEN- TRAL											
Kentucky:											
Covington.....	2	1	0	1	0	2	1	0	0	0	26
Lexington.....		0		0	0	0	0	0	0	0	14
Louisville.....	4	13	0	0	0	2	3	1	0	1	67
Tennessee:											
Memphis.....	5	12	1	0	0	6	3	3	1	0	66
Nashville.....	4	1	0	0	0	2	4	0	0	0	51
Alabama:											
Birmingham.....	5	2	0	0	0	6	2	2	1	0	76
Mobile.....	1	0	1	0	0	1	0	0	0	0	21
Montgomery.....	1	0	0	0	0	0	0	0	0	0	
WEST SOUTH CEN- TRAL											
Arkansas:											
Fort Smith.....	1	0	0	0			0	0		0	
Little Rock.....	2	5	0	0	0	0	1	0	0	0	
Louisiana:											
New Orleans.....	4	2	0	0	0	18	3	5	0	0	135
Shreveport.....	1	2	0	0	0	1	0	2	0	0	27
Oklahoma:											
Tulsa.....		2		1				0		0	
Texas:											
Dallas.....	4	4	0	0	0	3	2	0	1	2	55
Galveston.....	0	0	0	0	0	0	0	0	0	0	10
Houston.....	1	3	0	0	0	4	1	0	0	0	65
San Antonio.....	1	3	0	0	0	7	0	0	0	0	50
MOUNTAIN											
Montana:											
Billings.....	0	1	0	0	0	0	0	0	0	1	3
Great Falls.....	1	3	1	2	0	0	0	0	0	0	7
Helena.....	1	0	0	2	0	0	0	0	0	0	5
Missoula.....	0	0	0	0	0	0	0	1	1	0	7
Idaho:											
Boise.....	1	0	0	0	0	0	0	0	0	0	9
Colorado:											
Denver.....	7	23	1	0	0	6	1	1	1	0	72
Pueblo.....	1	1	0	0	0	1	0	1	0	0	7
New Mexico:											
Albuquerque.....	1	2	0	0	0	2	2	1	0	0	8
Utah:											
Salt Lake City.....	2	3	0	4	0	0	1	6	0	5	31
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	5
PACIFIC											
Washington:											
Seattle.....	8	5	1	0			1	0		2	
Spokane.....	7	10	2	4			1	0		0	
Tacoma.....	3	0	1	1	0	1	0	2	1	0	25
Oregon:											
Portland.....	0	2	3	4	0	2	2	0	0	1	61
California:											
Los Angeles.....	13	18	3	0	0	20	3	3	1	10	253
Sacramento.....	1	1	0	2	0	3	1	0	0	0	9
San Francisco.....	7	18	1	1	0	8	1	1	0	1	146

## City reports for week ended October 22, 1927—Continued

Division, State, and city	Meningo- coccus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infan- tile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
<b>NEW ENGLAND</b>									
Maine:									
Portland.....	0	0	0	0	0	0	0	2	1
Massachusetts:									
Boston.....	0	0	0	0	0	0	1	33	2
Springfield.....	0	1	0	0	0	0	1	1	1
Worcester.....	0	0	0	0	0	0	0	4	0
Rhode Island:									
Providence.....	0	0	1	0	0	0	0	4	0
<b>MIDDLE ATLANTIC</b>									
New York:									
New York.....	1	1	2	0	0	0	11	12	1
Rochester.....	0	0	0	1	0	0	0	0	0
New Jersey:									
Newark.....	0	0	1	0	0	0	0	1	0
Pennsylvania:									
Philadelphia.....	1	0	0	0	0	0	1	2	2
Pittsburgh.....	0	0	0	0	0	0	0	0	1
<b>EAST NORTH CENTRAL</b>									
Ohio:									
Cincinnati.....	0	0	0	0	0	0	0	2	0
Cleveland.....	1	0	0	0	0	0	1	2	0
Columbus.....	0	0	1	0	0	0	0	1	1
Toledo.....	1	0	0	0	0	0	0	1	0
Indiana:									
Indianapolis.....	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago.....	5	2	1	0	1	1	3	9	1
Michigan:									
Detroit.....	1	1	1	0	0	0	1	2	1
Flint.....	0	0	0	0	0	0	0	1	1
Grand Rapids.....	0	0	0	0	0	0	0	1	0
Wisconsin:									
Madison.....	1	1	0	0	0	0	0	0	0
Milwaukee.....	1	0	0	0	0	0	0	1	0
<b>WEST NORTH CENTRAL</b>									
Minnesota:									
Minneapolis.....	1	0	1	1	0	0	0	1	1
Iowa:									
Davenport.....	0	0	0	0	0	0	0	1	0
Waterloo.....	0	0	0	0	0	0	0	1	0
Missouri:									
Kansas City.....	0	0	0	1	0	0	0	2	0
<b>SOUTH ATLANTIC</b>									
Delaware:									
Wilmington.....	0	0	0	0	0	0	0	1	0
Maryland:									
Baltimore.....	0	0	0	0	0	0	0	1	0
District of Columbia:									
Washington.....	0	0	0	0	0	0	0	3	0
Virginia: <sup>1</sup>									
Lynchburg.....	0	0	0	0	0	1	0	0	0
Roanoke.....	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling.....	0	0	0	0	0	0	0	3	0
North Carolina:									
Raleigh.....	0	0	0	0	0	2	0	0	0
Winston-Salem.....	0	0	0	0	0	2	0	0	0
South Carolina:									
Charleston <sup>2</sup> .....	0	0	0	0	2	1	0	0	0
Georgia: <sup>2</sup>									
Atlanta.....	1	1	0	0	0	0	0	0	0
Brunswick.....	0	0	0	0	0	1	0	0	0
Florida:									
Tampa.....	1	1	0	0	1	0	0	0	0

<sup>1</sup> Typhus fever: 1 case at Norfolk, Va.<sup>2</sup> Dengue: 16 cases at Charleston, S. C., and 1 case at Savannah, Ga.

## City reports for week ended October 22, 1927—Continued

Division, State, and city	Meningo- coccus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infan- tile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
<b>EAST SOUTH CENTRAL</b>									
Kentucky:									
Lexington.....	0	0	0	0	0	0	-----	1	0
Louisville.....	0	0	0	0	0	0	0	1	0
Tennessee:									
Memphis.....	0	0	0	0	0	1	0	1	0
Nashville.....	0	0	0	0	0	0	0	1	1
Alabama:									
Birmingham.....	0	0	0	0	1	1	0	0	0
Mobile.....	0	0	0	0	1	0	0	0	0
<b>WEST SOUTH CENTRAL</b>									
Arkansas:									
Little Rock.....	1	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans.....	0	0	0	0	0	0	0	1	0
Shreveport.....	0	0	0	0	0	1	0	0	0
Texas:									
Dallas.....	0	0	0	0	0	1	0	2	0
<b>MOUNTAIN</b>									
Montana:									
Great Falls.....	0	0	0	0	0	0	0	1	0
Missoula.....	1	0	0	0	0	0	0	0	0
Colorado:									
Denver.....	2	0	0	0	0	0	0	4	0
Utah:									
Salt Lake City.....	1	0	0	0	0	0	0	0	0
<b>PACIFIC</b>									
Washington:									
Seattle.....	0	-----	0	-----	0	-----	0	1	-----
Spokane.....	1	0	0	0	0	0	0	1	-----
Tacoma.....	0	0	0	0	0	0	0	5	1
Oregon:									
Portland.....	0	0	0	0	0	0	0	2	1
California:									
Los Angeles.....	1	1	0	0	0	2	1	6	0
San Francisco.....	0	0	0	0	0	0	1	1	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 22, 1927, compared with those for a like period ended October 23, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, September 18 to October 22, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926<sup>1</sup>

## DIPHTHERIA CASE RATES

	Week ended—									
	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927
101 cities.....	107	103	127	130	150	143	165	144	203	<sup>2</sup> 168
New England.....	73	91	66	109	66	132	85	123	85	123
Middle Atlantic.....	70	96	81	123	119	129	100	123	122	143
East North Central.....	128	105	133	130	188	158	218	138	260	<sup>2</sup> 191
West North Central.....	127	87	143	123	177	145	210	119	240	129
South Atlantic.....	127	105	162	165	214	170	216	203	300	194
East South Central.....	134	82	269	66	253	153	269	158	398	168
West South Central.....	69	206	210	197	176	197	219	256	279	268
Mountain.....	137	234	292	189	173	126	164	198	255	153
Pacific.....	212	76	174	120	198	99	174	154	190	220

## MEASLES CASE RATES

	38	27	37	25	31	40	43	50	49	<sup>2</sup> 55
101 cities.....	38	27	37	25	31	40	43	50	49	<sup>2</sup> 55
New England.....	38	39	21	53	33	118	26	132	26	186
Middle Atlantic.....	9	30	10	33	11	56	9	53	12	64
East North Central.....	24	18	25	13	29	11	36	17	50	<sup>2</sup> 22
West North Central.....	28	20	10	6	26	12	44	14	42	22
South Atlantic.....	11	36	13	29	15	31	20	69	26	45
East South Central.....	10	15	5	20	5	56	0	127	21	51
West South Central.....	0	0	0	4	0	8	13	55	4	38
Mountain.....	118	45	109	0	109	27	237	18	337	72
Pacific.....	308	52	327	47	179	45	289	53	276	50

## SCARLET FEVER CASE RATES

	79	67	100	84	111	103	129	96	152	<sup>2</sup> 117
101 cities.....	79	67	100	84	111	103	129	96	152	<sup>2</sup> 117
New England.....	71	123	104	102	144	139	144	130	193	151
Middle Atlantic.....	56	42	51	59	57	101	62	63	51	74
East North Central.....	80	69	98	101	120	102	132	108	155	<sup>2</sup> 127
West North Central.....	153	60	198	79	216	107	319	175	373	137
South Atlantic.....	78	107	110	107	99	123	125	91	162	161
East South Central.....	83	46	98	117	145	66	145	82	222	148
West South Central.....	52	50	69	105	69	67	86	88	95	80
Mountain.....	118	153	319	36	301	126	264	108	447	279
Pacific.....	118	71	174	70	158	76	204	97	233	136

## SMALLPOX CASE RATES

	3	6	1	4	3	5	4	6	3	<sup>2</sup> 7
101 cities.....	3	6	1	4	3	5	4	6	3	<sup>2</sup> 7
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	1	1	0	1	1	1	3	5	3	<sup>2</sup> 0
West North Central.....	2	8	2	12	2	14	6	26	0	42
South Atlantic.....	6	0	4	4	0	4	4	2	9	7
East South Central.....	0	10	0	0	10	0	0	0	10	5
West South Central.....	13	0	0	8	4	4	4	4	0	0
Mountain.....	0	162	9	54	9	54	9	72	0	72
Pacific.....	19	21	5	24	19	31	32	16	16	21

<sup>1</sup> The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926, and 1927, respectively.

<sup>2</sup> Fort Wayne, Ind., not included.



*Summary of weekly reports from cities, September 18 to October 22, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued*

## TYPHOID FEVER CASE RATES

	Week ended—									
	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927
101 cities.....	44	28	42	19	33	25	32	19	26	<sup>2</sup> 20
New England.....	9	63	17	12	17	23	57	16	19	16
Middle Atlantic.....	45	24	28	18	27	21	26	16	20	15
East North Central.....	26	10	33	8	23	17	16	18	12	<sup>1</sup> 16
West North Central.....	26	14	40	20	22	28	14	22	22	22
South Atlantic.....	91	45	114	20	76	47	65	27	76	33
East South Central.....	165	87	129	117	145	20	140	31	98	31
West South Central.....	77	71	47	17	21	71	26	29	21	29
Mountain.....	36	36	82	36	64	54	46	63	27	81
Pacific.....	21	13	19	18	21	8	16	8	13	16

## INFLUENZA DEATH RATES

95 cities.....	6	3	6	6	4	5	6	6	7	<sup>10</sup> 9
New England.....	5	0	2	0	0	5	5	2	7	5
Middle Atlantic.....	3	2	2	4	3	6	4	8	8	7
East North Central.....	3	1	5	5	2	1	2	3	5	<sup>15</sup> 5
West North Central.....	8	2	0	8	6	4	11	2	2	12
South Atlantic.....	9	11	9	4	6	4	8	7	8	11
East South Central.....	10	10	10	25	5	10	16	10	10	25
West South Central.....	22	9	35	22	13	9	13	13	13	13
Mountain.....	9	0	18	27	18	45	27	9	27	18
Pacific.....	7	0	7	7	0	3	11	3	0	14

## PNEUMONIA DEATH RATES

95 cities.....	65	59	69	56	64	65	77	71	86	<sup>17</sup> 77
New England.....	75	70	87	58	33	81	75	95	83	86
Middle Atlantic.....	70	70	71	62	76	71	88	72	104	75
East North Central.....	45	44	59	41	54	58	62	49	61	<sup>166</sup> 66
West North Central.....	55	25	70	33	65	42	53	60	49	64
South Atlantic.....	79	66	66	66	61	57	89	108	113	72
East South Central.....	88	82	109	87	83	82	52	46	98	127
West South Central.....	93	69	66	95	88	69	106	69	53	86
Mountain.....	55	54	153	81	55	72	118	117	128	144
Pacific.....	78	65	28	45	53	69	81	83	90	100

<sup>1</sup> Fort Wayne, Ind., not included.

*Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively*

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total.....	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England.....	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic.....	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central.....	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central.....	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic.....	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central.....	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central.....	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain.....	9	9	572,100	580,000	572,100	580,000
Pacific.....	6	4	1,946,400	1,991,700	1,475,300	1,512,800

## FOREIGN AND INSULAR

### THE FAR EAST

*Report for week ended October 15, 1927.*—The following report for the week ended October 15, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Small-pox		Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra.....	0	0	1	0	2	2	Straits Settlements:						
British India:							Singapore.....	0	0	1	0	0	0
Bombay.....		1		0	3	0	Dutch East Indies:						
Tuticorin.....		0		0	2	0	Banjermasin.....	0	0	0	0	4	0
Nagapatam.....		0		0	1	0	Samarinda.....	0	0	0	0	4	1
Madras.....		0		0	2	0	China:						
Calcutta.....		0		19	1	1	Canton.....	0	0	2	2	0	0
Rangoon.....		0		0	0	0	Amoy.....	0	0	2		0	0
Siam: Bangkok.....	0	0	2	1	0	0	Shanghai (International settlement).....	0	0		2	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

#### ASIA

*Aden Protectorate.*—Perim, Kamaran, Aden.  
*Arabia.*—Bahrein.  
*Persia.*—Bender-Abbas, Mohammerah, Bushire.  
*Ceylon.*—Colombo.  
*India.*—Karachi, Chittagong, Cochin, Vizagapatam, Moulmein, Basseln.  
*Portuguese India.*—Nova Goa.  
*Federated Malay States.*—Port Swettenham.  
*Straits Settlements.*—Penang.  
*Dutch East Indies.*—Batavia, Semarang, Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya, Makassar, Balikpapan.  
*Se weak.*—Kuching.  
*British North Borneo.*—Sandakan, Jesselton, Kudat, Tawao.  
*Portuguese Timor.*—Dilly.  
*Philippine Islands.*—Iloilo, Jolo, Cebu, Zamboanga, Manila.  
*French Indo-China.*—Saigon and Cholon, Tourane, Haiphong.  
*China.*—Tsingtao, Tien-Tsin, Chinwang-Tao.  
*Hong Kong.*

#### Macao.

*Wei-hai-wei.*  
*Formosa.*—Keelung, Takao.  
*Chosen.*—Chemulpo, Fusan.  
*Manchuria.*—Yingkow, Antung, Harbin, Mukden, Changchun, Newchang.  
*Kwantung.*—Port-Arthur, Dairen.  
*Japan.*—Nagasaki, Yokohama, Niigata, Shimonoseki, Tsuruga, Kobe, Osaka, Hakodate, Moji.

#### AUSTRALASIA AND OCEANIA

*Australia.*—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.  
*New Guinea.*—Port Moresby.  
*New Britain, Mandated Territory.*—Rabaul and Kokopo.  
*New Zealand.*—Auckland, Wellington, Christchurch, Invercargill, Dunedin.  
*Western Samoa.*—Apia.  
*New Caledonia.*—Noumea.  
*Fiji.*—Suva.  
*Hawaii.*—Honolulu.  
*Society Islands.*—Papeete.

## AFRICA

*Egypt*.—Alexandria, Port Said, Suez.  
*Anglo-Egyptian Sudan*.—Port Sudan, Suakin.  
*Eritrea*.—Massawa.  
*French Somaliland*.—Djibouti.  
*British Somaliland*.—Berbera.  
*Italian Somaliland*.—Mogadiscio.  
*Kenya*.—Mombasa.  
*Zanzibar*.—Zanzibar.  
*Tanganyika*.—Dar-es-Salaam.

*Seychelles*.—Victoria.  
*Portuguese East Africa*.—Mozambique, Beira, Lourenco-Marques.  
*Union of South Africa*.—East London, Port Elizabeth, Cape Town, Durban.  
*Mauritius*.—Port Louis.  
*Reunion*.—Saint Denis.  
*Madagascar*.—Majunga, Diego-Suarez, Tamatave.  
**AMERICA**  
*Panama*.—Colon, Panama.

Reports had not been received in time for publication from—

*Dutch East Indies*.—Pontianak.

*Union of Socialist Soviet Republics*.—Vladivostok.

## Belated information:

Week ended October 1: *Pondicherry* and *Karikal*.—Nil. *Bombay*: 4 smallpox cases.

Week ended October 8: *Haiphong*.—Nil. *Calcutta*: 11 deaths from cholera, 1 fatal case of smallpox.

*Swatow*: 5 cholera cases.

## ARGENTINA

*Leprosy—Buenos Aires—June 27–October 2, 1927*.—During the period June 27 to October 2, 1927, eight new cases of leprosy with three deaths were reported at Buenos Aires, Argentina.

## BRITISH EAST AFRICA

*Cerebrospinal meningitis—Uganda—May, 1927*.—During the month of May, 1927, epidemic cerebrospinal meningitis was reported in Uganda, British East Africa, with 18 cases, and 16 deaths.

## CANADA

*Communicable diseases—Week ended October 22, 1927*.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven provinces of Canada for the week ended October 22, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever.....			4					4
Influenza.....	4							4
Poliomyelitis.....	1	2		6		1	10	20
Smallpox.....				38	5	11	9	63
Typhoid fever.....	4	17	21	27	10	7	3	89

*Communicable diseases—Quebec—Week ended October 22, 1927*.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 22, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	4	Scarlet fever.....	63
Chicken pox.....	15	Smallpox.....	8
Diphtheria.....	91	Tuberculosis.....	38
German measles.....	2	Typhoid fever.....	20
Influenza.....	1	Whooping cough.....	5
Measles.....	48		

*Diphtheria—scarlet fever—Rivière du Loup—October 23–29, 1927.*—During the week ended October 29, 1927, mild epidemics of diphtheria and scarlet fever were reported at Rivière du Loup and neighboring villages, Province of Quebec, Canada.

*Typhoid fever—Montreal—January 2–October 29, 1927.*—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927.....	3	1	June 11, 1927.....	128	36
Jan. 15, 1927.....	4	3	June 18, 1927.....	86	18
Jan. 22, 1927.....	1	2	June 25, 1927.....	75	23
Jan. 29, 1927.....	3	1	July 2, 1927.....	66	21
Feb. 5, 1927.....	1	0	July 9, 1927.....	52	10
Feb. 12, 1927.....	0	0	July 16, 1927.....	39	4
Feb. 19, 1927.....	1	2	July 23, 1927.....	22	9
Feb. 26, 1927.....	1	1	July 30, 1927.....	23	10
Mar. 5, 1927.....	9	1	Aug. 6, 1927.....	16	5
Mar. 12, 1927.....	203	4	Aug. 13, 1927.....	20	5
Mar. 19, 1927.....	383	14	Aug. 20, 1927.....	14	4
Mar. 26, 1927.....	568	22	Aug. 27, 1927.....	8	3
Apr. 2, 1927.....	649	48	Sept. 3, 1927.....	27	0
Apr. 9, 1927.....	386	40	Sept. 10, 1927.....	17	0
Apr. 16, 1927.....	175	38	Sept. 17, 1927.....	13	2
Apr. 23, 1927.....	125	43	Sept. 24, 1927.....	6	3
Apr. 30, 1927.....	106	23	Oct. 1, 1927.....	18	1
May 7, 1927.....	106	19	Oct. 8, 1927.....	14	1
May 14, 1927.....	367	16	Oct. 15, 1927.....	5	1
May 21, 1927.....	770	26	Oct. 22, 1927.....	3	1
May 28, 1927.....	353	38	Oct. 29, 1927.....	9	1
June 4, 1927.....	239	37			

#### CANARY ISLANDS

*Plague—Las Palmas—October 11, 1927.*—Under date of October 11, 1927, four cases of plague were reported in the vicinity of Las Palmas, Canary Islands.

#### CHINA

*Cerebrospinal meningitis—Foochow—Week ended September 24, 1927.*—During the week ended September 24, 1927, fatal cases of epidemic cerebrospinal meningitis were reported at Foochow, China. The port was stated to have been declared infected.

#### JAPAN

*Dysentery—Tokyo, city and prefecture—September 4–October 1, 1927.*—During the period September 4 to October 1, 1927, dysentery was reported in the city and prefecture of Tokyo, Japan, as follows: Tokyo City—cases, 351; deaths, 153; population, 1,995,567. Prefecture (outside city)—cases, 416; deaths, 222; population, 2,489,577.

#### MEXICO

*Mortality, gastroenteritis—Mazatlan—October 3–16, 1927.*—During the two weeks ended October 16, 1927, seven deaths from gastroenteritis were reported at Mazatlan, Mexico. Population, 30,000.

## PERSIA

*Cholera epidemic in Persian Gulf Region.—Precautions to prevent spread.*—According to information dated September 30, 1927, an epidemic of cholera of average intensity was declared prevalent July 28, 1927, in the Persian Gulf region, Persia, with localization at Abadan, Basra, and Mohammerah. Measures prescribed to prevent spread of infection were as follows:

(1) Passports for points in Syria and the Lebanon required to show anticholera vaccination within previous three months, two vaccinations, with from five to eight days' interval, being required.

(2) Closing of northern and western frontiers of Persia, leaving the Baghdad-Damascus Road the only authorized route of travel.

(3) Permanent sanitary barriers established at designated points to secure control of passports, vaccination of unvaccinated travelers, and diversion of travel toward Damascus. Establishment of supplementary barriers for travel to Homs and Aleppo and supervision of the railway line. Travelers allowed to pass under the conditions stated were required to state their ultimate destinations and were there subject to supervision by the proper sanitary authorities. Maritime travel is similarly controlled on embarkation at Beirut.

## PERU

*Mortality from communicable diseases—Arequipa—June-August, 1927.*—During the three months ended August 31, 1927, mortality from communicable diseases was reported at Arequipa, Peru, as follows:

Disease	Deaths		
	June, 1927	July, 1927	August, 1927
Gastroenteritis.....	3	1	3
Influenza.....	5	7	15
Measles.....		3	3
Scarlet fever.....		1	
Tuberculosis.....	17	13	14
Typhoid fever.....			2
Typhus fever.....			2
Whooping cough.....			13

Population, estimated, 43,500.



**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER****Reports Received During Week Ended November 11, 1927<sup>1</sup>**

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

**CHOLERA**

Place	Date	Cases	Deaths	Remarks
China:				
Amoy.....	Sept. 11-24.....	33		
Canton.....	Sept. 11-17.....	7	7	
Shanghai.....	Sept. 18-Oct. 1.....		10	Reported in International Settlement and French Concession.
India:				
Calcutta.....	Sept. 18-24.....	19	11	
Madras.....	Sept. 25-Oct. 1.....	4	3	
Siam:				
Bangkok.....	Sept. 11-17.....	1	1	Sept. 11-17, 1927: Cases, 21; deaths, 11. Apr. 1-Sept. 17, 1927: Cases, 733; deaths, 500. District.

**PLAGUE**

British East Africa:				
Tanganyika Territory.....	Aug. 7-28.....		30	
Uganda.....	May 1-31.....	103	73	
Canary Islands:				
Las Palmas.....	Oct. 11.....	4		In zone.
Ceylon:				
Colombo.....	Sept. 18-24.....	1	1	
India:				
Madras Presidency.....	Aug. 14-27.....	782	480	
Indo-China (French):				
Saigon.....	Sept. 4-10.....	111	62	
Java:				
Batavia.....	Sept. 2-16.....	2		
East Java and Madura:				
Surabaya.....	Sept. 11-17.....	17	17	Province.
	Aug. 28-Sept. 3.....	5	5	

**SMALLPOX**

British East Africa:				
Tanganyika Territory.....	Aug. 7-28.....		21	
Zanzibar.....	June 1-30.....	26	14	
Do.....	July 1-31.....	64	18	
Do.....	Aug. 1-31.....	12	2	
Canada:				
Alberta.....	Oct. 16-22.....			Cases, 63.
Manitoba.....	do.....	9		
Ontario.....	do.....	5		
Toronto.....	do.....	38		
Quebec.....	do.....	6		
Saskatchewan.....	do.....			Cases, 8.
Moose Jaw.....	do.....	11		
China:				
Hong Kong.....	do.....	1		
Great Britain:				
England—	Sept. 12-17.....		1	
Manchester.....	Oct. 9-15.....			Cases, 124.
Newcastle-on-Tyne.....	do.....	2		
India:				
Calcutta.....	do.....	5		
Madras.....	Aug. 14-27.....			Cases, 2,550; deaths, 669.
Rangoon.....	Sept. 18-24.....	2	2	
Indo-China (French):				
Saigon.....	Sept. 25-Oct. 1.....	3		
Iraq:				
Baghdad.....	Sept. 18-24.....	6	1	
Basra.....	Sept. 3-9.....	1		
Java:				
East Java and Madura—				
Surabaya.....	Sept. 18-Oct. 1.....	5	3	
Syria:				
Damascus.....	Sept. 4-17.....	4	4	
	Aug. 28-Sept. 3.....	3		
	Sept. 11-20.....	1		

<sup>1</sup> From medical officers of the Public Health Service, American consuls and other sources.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

## **Reports Received During Week Ended November 11, 1927—Continued**

### **TYPHUS FEVER**

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers.....	Oct. 1-10.....	1		In native.
Bulgaria:				
Sofia.....	Oct. 1-14.....	7		
Egypt:				
Cairo.....	June 25-July 1.....	1		
Peru:				
Arequipa.....	Aug. 1-31.....		2	
Poland.....				Aug. 20-Sept. 17, 1927: Cases, 17; deaths, 2.

## **Reports Received from June 25 to November 4, 1927<sup>1</sup>**

### **CHOLERA**

Place	Date	Cases	Deaths	Remarks
China:				
Amoy.....	May 22-Sept. 10.....	70	11	
Canton.....	May 1-Sept. 10.....	74	39	
Foochow.....	July 24-Sept. 10.....			Present.
Hong Kong.....	July 17-Sept. 3.....	3	3	
Kulangsai.....	June 21.....	1		
Shanghai.....	June 19-25.....	2		
Do.....	July 31-Sept. 17.....		104	In international settlement and French concession.
Swatow.....	May 15-Sept. 10.....	138	13	
Tientsin.....	Aug. 27-Sept. 17.....	9		
India:				Cases, 159,454; deaths, 87,607.
Bombay.....	May 8-Sept. 17.....	127	57	
Calcutta.....	do.....	708	415	
Karachi.....	May 29-June 4.....	1	1	
Madras.....	June 19-Sept. 24.....	819	434	
Rangoon.....	May 8-Sept. 24.....	20	16	
India, French settlements in.....	Mar. 30-July 16.....	171	109	
Indo-China (French).....	Apr. 1-Aug. 10.....			Cases, 13,640.
do.....	do.....	2,936		
Annam.....	do.....	335		
Cochin-China.....	do.....	1,519		
Saigon.....	June 4-Sept. 2.....	11	4	
Laos.....	July 11-Aug. 10.....	137		
Tonkin.....	Apr. 1-Aug. 10.....	9,713		
Iraq:				
Baghdad.....	July 24-30.....	29	18	
Basra.....	July 17-Sept. 17.....	383	288	
Japan:				
Yokohama.....	July 31-Aug. 6.....	1	1	
Persia:				
Abadan.....	July 24-Aug. 13.....	215	183	
Ahwaz.....	July 31-Aug. 13.....	20	13	
Minab.....	Aug. 7-13.....		23	
Mohammerah.....	July 17-Aug. 27.....	194	155	
Nasseri.....	July 19-31.....		10	
Philippine Islands:				
Manila.....	July 17-Aug. 27.....	2		
Bulacan Province.....	June 7-July 8.....	3	2	
Leyte Province--				
Barugo.....	June 29.....	1	1	
Carigara.....	June 23.....	1	1	Final diagnosis not received.
Palo.....	May 18.....	1		
Siam:				Cases, 325; deaths, 198.
Bangkok.....	May 1-Sept. 10.....			
do.....	do.....	47	14	
On vessel:				
S. S. Adrastus.....	Reported Aug. 6.....	1	1	At Yokohama, Japan.
S. S. Montreal Maru.....	Sept. 20.....			At Muke, Japan.
S. S. Tabaristan.....	Oct. 6.....	1		Case in coolie removed at Basra.
S. S. Morea.....	Sept. 2.....			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).....	Aug. 4.....	1	1	At Saffagha, Egypt.

<sup>1</sup> From medical officers of the Public Health Service, American consuls, and other sources.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

**Reports Received from June 25 to November 4, 1927—Continued**

## **PLAGUE**

Place	Date	Cases	Deaths	Remarks
<b>Algeria:</b>				
Algiers.....	Aug. 21-31.....	1		
Oran.....	Aug. 21-Sept. 10.....	5	4	
<b>Argentina:</b>				Cases, 80; deaths, 44.
Buenos Aires.....	Jan. 1-Aug. 2.....		3	
Cordoba.....	Apr. 10-May 7.....	4		
Corrientes.....	Jan. 11-Aug. 6.....	52	29	
Entre Rios.....	June 1.....	1	1	
Santa Fe.....	Mar. 29-Aug. 13.....	8	1	
Territory—	Apr. 23-May 16.....	4	3	
Chaco—				
Barranqueras.....	May 29.....	2	2	
Formosa.....	June 25.....	3	2	
Pampa.....	July 27-Aug. 2.....	4		
Rio Negro.....	Aug. 6.....	1		
City—				Present.
Merou.....	Reported July 14.....			
Rosario.....	May 7.....	1	1	
Santa Fe.....	May 16.....	4	2	
<b>Azores:</b>				
St. Michaels Island.....	May 15-Aug. 27.....	6		
Riberia Grande.....	June 12-18.....	1		
<b>Brazil:</b>				
Sao Paulo.....	June 3-9.....	1	1	
<b>British East Africa:</b>				
Kenya.....	Apr. 24-July 31.....	73	14	
Mombassa.....	July 24-30.....	1	1	
Nairobi.....	May 22-28.....	6		
Tanganyika.....	Mar. 29-May 23.....		37	
Do.....	July 24-Aug. 6.....		10	
Uganda.....	Jan. 1-Feb. 23.....	138	121	
Do.....	Mar. 27-June 18.....	360	300	
<b>Canary Islands:</b>				
Laguna district—				
Tejina.....	June 17.....	1		
Las Palmas.....	Oct. 8.....	4		
<b>Ceylon:</b>				
Colombo.....	May 1-Sept. 17.....	20	13	Plague rats, 4.
<b>China:</b>				
Amoy.....	July 3-23.....			Present in surrounding country.
Mongolia.....	Reported Oct. 11.....		200	Approximate.
Tientsin.....	Aug. 14-20.....	2		
Tungliao.....	Reported Oct. 15.....			Outbreak.
<b>Ecuador:</b>				
Guayaquil.....	June 1-Aug. 31.....	7		Rats taken, 72,410; found infected, 45.
<b>Egypt:</b>				
Alexandria.....	June 4-Sept. 2.....	4		
Beni-Suef.....	June 4-July 13.....	5	2	
Biba.....	June 4-10.....	1		At Nama.
Dakhalia.....	June 24-July 9.....	6	1	
Minia.....	Aug. 8-9.....	4		
Port Said.....	June 24-July 21.....	4	1	
Suez.....	Sept. 4.....	1		
Tanta district.....	June 4-10.....	1		
<b>Greece:</b>				
Athens.....	May 1-June 30.....	4	3	
Mytilene.....	June 1-Aug. 29.....	3		Including Piraeus.
Patras.....	Aug. 9.....	1		
	May 30-Oct. 1.....	9	2	
<b>Hawaii Territory:</b>				
Hamakua.....	July 15-Aug. 30.....			2 plague rodents.
Honokaa.....	May 17-23.....	2	2	
Kukuihaele.....	Aug. 12-17.....	1	1	Do.
Paaulo.....	July 26-Aug. 1.....		4	
<b>India:</b>				Cases, 22,926; deaths, 8,790.
Bombay.....	Apr. 17-Sept. 3.....		85	
Calcutta.....	May 8-Sept. 17.....	100		
Madras.....	Aug. 21-Sept. 3.....	18	10	
Rangoon.....	May 1-Sept. 3.....	1,126	506	
	May 8-Sept. 17.....	70	64	
<b>Indo-China (French):</b>				
Kwang-Chow-Wan.....	Apr. 1-Aug. 10.....	50		
	May 21-July 31.....	73		
<b>Iraq:</b>				
Baghdad.....	Apr. 8-May 23.....	12	1	
<b>Java:</b>				
Batavia.....	May 1-Sept. 10.....	275	275	Province.
East Java and Madura.....	May 22-July 16.....	28	27	
Paseroean Residency.....	May 9.....			Outbreak reported at Nagdi-
Surabaya.....	Apr. 17-Aug. 27.....	70	69	wano.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

## **Reports Received from June 25 to November 4, 1927—Continued**

### **PLAGUE—Continued**

Place	Date	Cases	Deaths	Remarks
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 31	99	92	
Antsirabi	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 31	69	63	
Moramanga	May 16-July 31	28	27	
Tananarive	Mar. 16-July 31	233	204	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Sept. 25			Cases, 1,030; deaths, 606.
Baol	June 2-Oct. 2	179	95	
Cayor Frontier	July 4-Oct. 2	917	530	
Dakar	June 29-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-25	5	4	
M' Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-Aug. 27			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Do	Sept. 18-24	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capatric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

### **SMALLPOX**

Algeria	Apr. 21-July 31			Cases, 882.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 10	69		
Angola	June 1-July 31	45		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Aug. 31	8		
Rio de Janeiro	May 22-Sept. 17	23	19	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa:				
Northern Rhodesia	Apr. 30-Sept. 9	179	3	

# CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

## Reports Received from June 25 to November 4, 1927—Continued

### SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada.....	June 5-Oct. 15.....	-----	-----	Cases, 635.
Alberta.....	June 12-Oct. 15.....	-----	-----	Cases, 224.
Calgary.....	June 12-Aug. 27.....	9	-----	-----
British Columbia—	-----	-----	-----	-----
Vancouver.....	May 23-Sept. 4.....	4	-----	-----
Manitoba.....	June 5-Oct. 8.....	-----	-----	Cases, 40.
Winnipeg.....	June 12-Oct. 22.....	23	-----	-----
Nova Scotia.....	Sept. 11-Oct. 15.....	2	-----	-----
Halifax.....	Oct. 8-15.....	1	-----	-----
Ontario.....	June 5-Oct. 15.....	-----	-----	Cases, 273.
Ottawa.....	June 12-Oct. 22.....	205	-----	-----
Sarnia.....	Aug. 7-13.....	1	-----	-----
Toronto.....	June 19-Oct. 15.....	15	-----	-----
Windsor.....	Oct. 2-15.....	9	-----	-----
Quebec.....	June 19-Aug. 27.....	15	-----	-----
Saskatchewan.....	June 12-Oct. 15.....	-----	-----	Cases, 140.
Moose Jaw.....	Aug. 14-Oct. 18.....	23	-----	-----
Regina.....	July 17-Oct. 8.....	15	-----	-----
Ceylon.....	May 1-7.....	-----	-----	Cases, 3; deaths, 1.
Colombo.....	July 31-Aug. 6.....	1	1	-----
China:.....	-----	-----	-----	-----
Amoy.....	May 8-28.....	1	-----	-----
Do.....	July 3-16.....	-----	-----	Present in surrounding country.
Antung.....	July 4-31.....	3	-----	-----
Chefoo.....	May 8-14.....	-----	-----	Present.
Foochow.....	May 8-Sept. 10.....	-----	-----	Do.
Hong Kong.....	May 8-Sept. 3.....	22	20	-----
Manchuria—	-----	-----	-----	-----
Anshan.....	May 22-28.....	1	-----	-----
Changchun.....	May 15-July 30.....	8	-----	-----
Dairen.....	May 2-July 3.....	10	5	-----
Fushun.....	May 15-Sept. 17.....	11	-----	-----
Harbin.....	June 13-July 10.....	4	-----	-----
Kalyuan.....	July 3-9.....	2	-----	-----
Mukden.....	May 22-July 30.....	6	-----	-----
Pensihu.....	July 3-9.....	1	-----	-----
Ssuningkai.....	May 8-July 9.....	3	-----	-----
Tientsin.....	May 8-Sept. 10.....	18	4	-----
Chosen.....	Feb. 1-June 30.....	-----	-----	Cases, 507; deaths, 205.
Chinnampo.....	Apr. 1-May 31.....	2	-----	-----
Fusan.....	Apr. 1-30.....	1	-----	-----
Gensan.....	May 1-31.....	1	-----	-----
Seishin.....	Apr. 1-30.....	1	-----	-----
Curacao.....	May 29-June 4.....	1	-----	Alastrim.
Ecuador:.....	-----	-----	-----	-----
Guayaquil.....	June 1-Aug. 31.....	4	-----	-----
Egypt.....	May 7-July 29.....	-----	-----	Cases, 21; deaths, 3.
Alexandria.....	May 21-June 17.....	4	1	-----
Cairo.....	Jan. 22-Apr. 15.....	14	3	-----
France.....	Apr. 1-July 31.....	-----	-----	Cases, 201.
Lille.....	July 24-30.....	1	-----	-----
Paris.....	May 21-July 31.....	14	2	-----
Gold Coast.....	Mar. 1-June 30.....	41	7	-----
Great Britain:.....	-----	-----	-----	-----
England and Wales.....	May 22-Oct. 8.....	-----	-----	Cases, 3,480.
Birmingham.....	Aug. 14-Sept. 30.....	2	-----	-----
Bradford.....	May 29-June 11.....	2	-----	-----
Cardiff.....	June 19-July 2.....	4	-----	-----
Leeds.....	July 17-Oct. 8.....	17	-----	-----
Liverpool.....	July 17-30.....	1	-----	-----
London.....	May 15-June 18.....	2	-----	-----
Manchester.....	Oct. 2-8.....	1	-----	-----
Newcastle upon Tyne.....	June 12-Oct. 1.....	6	-----	-----
Sheffield.....	June 12-Oct. 8.....	29	-----	-----
Stoke-on-Trent.....	Aug. 21-27.....	1	-----	-----
Scotland.....	-----	-----	-----	-----
Dundee.....	May 29-Sept. 3.....	6	-----	-----
Greece.....	June 1-29.....	14	-----	-----
Salonika.....	July 12-Aug. 15.....	-----	2	-----
Guatemala:.....	-----	-----	-----	-----
Guatemala City.....	June 1-30.....	-----	9	-----
Guinea (French).....	June 4-10.....	9	-----	-----



# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

**Reports Received from June 25 to November 4, 1927—Continued**

## **SMALLPOX—Continued**

Place	Date	Cases	Deaths	Remarks
India.....	Apr. 17-Sept. 3.....			Cases, 73,504; deaths, 19,402.
Bombay.....	May 28-Sept. 17.....	243	158	
Calcutta.....	May 8-Sept. 17.....	410	313	
Karachi.....	May 15-Aug. 6.....	10	5	
Madras.....	May 22-Sept. 24.....	31	8	
Rangoon.....	May 8-Sept. 17.....	186	156	
India, French Settlements in.....	Mar. 20-June 18.....	174	111	
Indo-China (French).....	Mar. 21-Aug. 10.....			Cases, 318.
Saigon.....	May 14-Aug. 19.....	3	1	
Iraq:				
Baghdad.....	Apr. 10-Sept. 4.....	3	1	
Basra.....	Apr. 10-Sept. 17.....	5	4	
Italy.....	Apr. 10-May 21.....	13		
Rome.....	June 13-July 10.....	2		Reported as alastrim
Jamaica.....	May 29-Sept. 24.....	37		Cases, 19.
Japan:				
Nagasaki City.....	Apr. 3-May 7.....			
Taiwan Island.....	June 20-Aug. 14.....	25	7	
	May 21-31.....	1		
Java:				
Batavia.....	May 22-Aug. 20.....	7		
East Java and Madura.....	Apr. 24-Aug. 20.....	17		
Latvia.....	Apr. 1-30.....	1		
Mexico.....	Mar. 1-May 31.....			Deaths, 557.
Acapulco.....	Aug. 28-Sept. 17.....	2	2	
Durango.....	June 1-30.....		1	
Monterey.....	July 1-31.....	6	4	
San Luis Potosi.....	May 29-Aug. 13.....		11	
Tampico.....	June 1-July 31.....	1	2	
Torreón.....	Aug. 7-Oct. 1.....		2	
Morocco.....	Apr. 1-July 31.....	207		
Netherlands India:				
Borneo—				
Holce Soengel.....	Apr. 21.....			Epidemic in 2 localities.
Pasir Residency.....	Apr. 30-May 6.....			Epidemic outbreak.
Samarinda Residency.....	May 21-27.....			Do.
Nigeria.....	Mar. 1-June 30.....	2,352	570	
Paraguay:				
Asuncion.....	July 10-23.....		2	
Persia:				
Teheran.....	Feb. 21-July 23.....		16	
Poland.....	Apr. 10-Aug. 6.....	20	2	
Portugal:				
Lisbon.....	May 29-Oct. 8.....	26	1	
Oporto.....	Sept. 3-9.....	1		
Senegal:				
Medina.....	July 4-10.....	7		
Siam.....	Apr. 1-Sept. 3.....			Cases, 246; deaths, 66.
Bangkok.....	May 1-Sept. 10.....	16	8	
Spain:				
Madrid.....	Aug. 1-31.....		1	
Valencia.....	May 29-June 4.....	3		
Do.....	Sept. 25-Oct. 1.....	1		
Straits Settlements.....	June 12-18.....			Cases, 3.
Singapore.....	Apr. 1-June 18.....	7	2	
Sumatra:				
Medan.....	June 5-Aug. 20.....	3		
Switzerland:				
Berne.....	June 26-July 2.....	1		
Syria:				
Damascus.....	Aug. 11-31.....	3		
Tunisia.....	Apr. 1-June 10.....			Cases, 10.
Tunis.....	June 1-10.....	1		
Union of South Africa:				
Cape Province.....	July 7-Aug. 20.....			Outbreaks.
Elliott district.....	May 11-June 10.....			Do.
Idutywa district.....	July 3-9.....			Do.
Kalanga district.....	May 11-June 10.....			Do.
Mount Ayliffe district.....	July 31-Aug. 6.....			Do.
Orange Free State.....	Aug. 7-13.....			Do.
Transvaal.....				
Barberton district.....	May 1-7.....			Do.
Venezuela:				
Maracaibo.....	July 12-Sept. 12.....		3	

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

## **Reports Received from June 25 to November 4, 1927—Continued**

### **TYPHUS FEVER**

Place	Date	Cases	Deaths	Remarks
Algeria.....	Apr. 21-July 20.....			Cases, 399; deaths, 39.
Algiers.....	May 11-Sept. 20.....	32		
Oran.....	May 21-Aug. 31.....	34		
Argentina:				
Rosario.....	Aug. 1-31.....		1	
Bulgaria.....	Mar. 1-July 10.....			Cases, 226; deaths, 20.
Sofia.....	June 4-Sept. 30.....	10		
Chile:				
Antofagasta.....	Apr. 16-May 31.....	1		
Do.....	Sept. 25-Oct. 1.....		1	
Concepcion.....	May 29-June 4.....		1	
La Calera.....	Apr. 16-May 31.....	1		
Ligua.....	Mar. 16-31.....	2		
Puerto Montt.....	Apr. 16-May 31.....	1		
Santiago.....	do.....	5	1	
Talcahuano.....	July 10-16.....		1	
Valparaiso.....	Apr. 16-Sept. 3.....	5	3	
China:				
Manchuria--				
Harbin.....	July 25-Aug. 21.....	5		
Mukden.....	May 29-June 4.....	1		
Tientsin.....	July 10-16.....	1		
Chosen.....	Feb. 1-June 30.....			Cases, 721; deaths, 60.
Chemulpo.....	May 1-Aug. 31.....	3		
Gensan.....	do.....	4		
Seoul.....	Apr. 1-Aug. 31.....	35	3	
Czechoslovakia.....	do.....			Cases, 55.
Egypt.....	May 28-Sept. 2.....			Cases, 127; deaths, 19.
Alexandria.....	May 21-Aug. 5.....	13	5	
Cairo.....	Jan. 15-June 24.....	42	16	
Port Said.....	Sept. 24-30.....	1		
Estonia.....	Apr. 1-June 30.....			Cases, 5.
Greece.....	June 1-30.....	2		
Athens.....	June 1-July 31.....		9	
Guatemala:				
Guatemala.....	Aug. 25-31.....		1	
Iraq:				
Baghdad.....	Apr. 24-30.....	1		
Irish Free State:				
Cork County.....	July 3-9.....	1		In urban district.
Latvia.....	Apr. 1-July 31.....	32		
Lithuania.....	Feb. 1-July 31.....	347	42	
Mexico.....	Feb. 2-May 31.....			Deaths, 140.
Mexico City.....	May 29-Sept. 24.....	69		Including municipalities in Federal district.
San Luis Potosi.....	July 31-Aug. 6.....		1	
Morocco.....	Apr. 1-Aug. 20.....	952		
Palestine.....	May 24-Sept. 26.....			Cases, 29.
Haifa.....	May 24-Aug. 29.....	8		
Jaffa.....	Aug. 2-Oct. 3.....	3		
Jerusalem.....	June 28-Aug. 15.....	3		
Mahnaim.....	May 17-23.....	1		In Safad district.
Nazareth.....	July 19-25.....	1		
Safad.....	May 17-Aug. 8.....	10		
Peru:				
Arequipa.....	Apr. 1-30.....		1	
Poland.....	Apr. 10-Sept. 3.....	1,100	100	
Portugal:				
Lisbon.....	May 29-June 4.....	1		
Oporto.....	Aug. 20-27.....	1		
Rumania.....	Apr. 3-July 23.....	956	64	
Spain:				
Seville.....	Aug. 19-25.....		2	
Syria:				
Aleppo.....	Sept. 11-17.....	2		
Tunisia.....	Apr. 22-July 20.....			Cases, 158.
Tunis.....	July 5-Aug. 21.....	2		
Turkey:				
Constantinople.....	May 13-19.....		2	
Union of South Africa.....	Apr. 1-30.....			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province.....	Apr. 1-Aug. 27.....	42	5	Outbreaks.
Albany district.....	June 5-11.....			Do.
East London.....	May 22-28.....	1		Do.
Glen Gray district.....	May 1-7.....			Do.
Kentani district.....	June 26-July 2.....			Do.
Port Elizabeth.....	Aug. 7-13.....	1		
Qumbu district.....	May 1-7.....			Do.
Umzimkulu district.....	June 26-July 2.....			Do.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**

**Reports Received from June 25 to November 4, 1927—Continued**

## **TYPHUS FEVER—Continued**

Place	Date	Cases	Deaths	Remarks
Union of South Africa—Con.				
Natal.....	Apr. 1-Aug. 6.....	7	3	Outbreaks.
Impendhle district.....	June 5-11.....	.....	.....	
Orange Free State.....	Apr. 1-July 23.....	5	.....	
Transvaal.....	Apr. 1-30.....	1	.....	
Johannesburg.....	July 3-Aug. 20.....	19	5	Cases, 24; deaths, 5.
Yugoslavin.....	May 1-Aug. 31.....	.....	.....	

## **YELLOW FEVER**

Ashanti:				
Obussl.....	Aug. 6.....	1	1	In Syrian woman.
Dahomey (West Africa):				
Porto Novo.....	July 1.....	1	1	
Gold Coast.....	Apr. 1-June 30.....	60	22	
Do.....	Aug. 4.....	2	.....	Present
Ivory Coast.....	July 29.....	1	1	
Liberia:				
Monrovia.....	May 29-July 8.....	4	5	
Senegal:				
Dakar.....	July 9.....	1	.....	
Do.....	Aug. 8.....	.....	2	
Do.....	Sept. 17.....	.....	.....	
Geoul.....	Sept. 26-Oct. 2.....	1	1	
Island of Goree.....	Aug. 22-Sept. 4.....	2	2	
Khombole.....	Aug. 1-Oct. 2.....	4	1	In European.
Louga.....	Sept. 26-Oct. 2.....	1	1	
M'Bour.....	May 27-June 19.....	5	5	
Ouakam.....	June 2-Aug. 14.....	4	2	
Pout.....	Sept. 19-25.....	1	1	
St. Louis.....	Aug. 1-Oct. 2.....	3	3	
Thies.....	July 10.....	1	1	
Do.....	Sept. 12-Oct. 2.....	4	4	
Tiaroye.....	Aug. 22-Sept. 4.....	1	1	
Tivaouane.....	May 27-Sept. 11.....	6	5	
Togoland:				
Meiatza.....	Aug. 15-21.....	1	1	